



DEVELOPMENT SERVICES DEPARTMENT  
ENVIRONMENTAL COORDINATOR  
450 110<sup>th</sup> Ave NE., P.O. BOX 90012  
BELLEVUE, WA 98009-9012

**OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS**

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 21-107192-LO

Project Name/Address: 2422 and 2436 W Lake Sammamish Pkwy. SE

Planner: Reilly Pittman  
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**Minimum Comment Period:** June 3, 2021

Materials included in this Notice:

- Blue Bulletin
- Checklist
- Vicinity Map
- Plans
- Other:

**OTHERS TO RECEIVE THIS DOCUMENT:**

- State Department of Fish and Wildlife
- State Department of Ecology, Shoreline Planner N.W. Region
- Army Corps of Engineers
- Attorney General
- Muckleshoot Indian Tribe



# SEPA Environmental Checklist

The City of Bellevue uses this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

## Instructions

The checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully and to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions.

You may respond with "Not Applicable" or "Does Not Apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies and reports. Please make complete and accurate answers to these questions to the best of your ability in order to avoid delays. For assistance, see [SEPA Checklist Guidance](#) on the Washington State Department of Ecology website.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The city may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

## Background

1. Name of proposed project, if applicable 2442 WLSP Sinkhole Lake Restoration Project
2. Name of applicant City of Bellevue Utilities Department
3. Contact person Abe Santos Phone (425) 452 6456
4. Contact person address 450 110th Avenue NE Bellevue, WA 98004
5. Date this checklist was prepared 3/12/2021
6. Agency requesting the checklist City of Bellevue Development Services Department (DSD)

7. Proposed timing or schedule (including phasing, if applicable)

The project will be constructed in approximately 3 months (September through November 2021) with in-water work scheduled for October 2021.

8. Do you have any plans for future additions, expansion or further activity related to or connected with this proposal? If yes, explain.

No future additions, expansion, or further activity is related to this proposal. Should future maintenance or repair arise, it will undergo applicable permitting.

9. List any environmental information you know about that has been prepared or will be prepared, that is directly related to this proposal.

The Clean Water Act Section 404 permit was received in October 2020. This included a Biological Assessment and a Joint Aquatic Resources Permit (JARPA). As part of this process, Jacobs has coordinated with the Muckleshoot Indian Tribe for tribal input and with the Washington State Department of Ecology for Clean Water Act Section 401 and Coastal Zone Management Act consistency. The Washington Department of Fish and Wildlife (WDFW) Hydraulic Project Approval review process was also initiated. Future environmental documentation includes a Critical Areas Report, a Stormwater Pollution Prevention Plan (SWPPP), and a Temporary Erosion and Sediment Control (TESC) Plan.

10. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Two City of Bellevue (City) projects are located on the same parcel as this proposal: the West Lake Sammamish Pressure Increase Project and the Wastewater Pump Replacement Project. These two projects involve replacing aging utilities equipment and will not interfere with activities proposed as part of the 2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project (Project).

11. List any government approvals or permits that will be needed for your proposal, if known.

The City requires a Critical Areas Land Use Permit and a Clear and Grade Permit. The Project is requesting an exemption from the Shoreline Substantial Development Permit. A National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit is required by the state of Washington.

12. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

On November 25, 2019, the City identified an emergency need for repairing/replacing a failed 24-inch storm drain, located at 2442 West Lake Sammamish Parkway SE. In response to the emergency repair order, the City installed temporary bypass pumping to pump stormwater around the damaged pipe section. Heavy precipitation occurring between December 19 and 20, 2019, resulted in significant stormwater flows that overwhelmed the temporary pumps. This resulted in significant downstream flooding, with water flowing through the pedestrian tunnel under West Lake Sammamish Parkway SE and consequently eroding the downstream hill slope and damaging the community pedestrian beach access and a neighboring property. The majority of the restoration work was completed by late March 2020. In early April, after Lake Sammamish started to recede to summer levels, both property owners reported that there was still a large amount of sediment in the nearshore area of the lake impeding shoreline recreation access, and the owners requested the material be removed. Field investigations by Jacobs revealed that approximately 150 cubic yards of material needs to be removed. This Project will construct the mitigation improvements for the emergency repair work, including excavating 150 cubic yards of mixed fines, rounded gravels, and cobbles to smooth the beach slope so that it matches conditions prior to the sediment deposition from the failed storm drain. Based on coordination with the WDFW, the City also proposes to mitigate for impacts by shortening the stormwater outfall to above the ordinary high water mark (OHWM) of Lake Sammamish and installing an energy dissipation pad that will extend below the OHWM; removing human-made debris (including three mooring piles), and planting native vegetation along the shoreline in the southeast corner of the Bortko property.

13. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and the section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Project is located at 2442 West Lake Sammamish Parkway SE, in Bellevue, Washington (within Section 13, Township 24N, Range 5E). The Project site is on the west shore of Lake Sammamish, approximately 3.6 miles southeast of downtown Bellevue. The Project site is composed of two parcels: 122405TRCT (shared between Bellevue Utilities and the Sammamish Beach Club) and 1224059046 (owned by Dennis and Trina Bortko), as well as an unowned water tract in Lake Sammamish (confirmed – not Washington Department of Natural Resources-owned or leased).

## Environmental Elements

### Earth

1. General description of the site:

- Flat
- Rolling
- Hilly
- Steep Slopes
- Mountainous
- Other \_\_\_\_\_

2. What is the steepest slope on the site (approximate percent slope)? \_\_\_\_\_

According to the Bellevue Map Viewer, steep slopes greater than 40% are located directly east of West Lake Sammamish Parkway SE, extending eastward. This steep area is approximately 115 feet away from the Project area. The beach itself is relatively flat and the Project area contains slopes of 10 to 20% from shore to nearshore beach zones.

3. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Site soils consist of Everett gravelly sandy loam, 15 to 30 percent slopes. No agricultural soils will be removed.

4. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The Bellevue Map Viewer maps the Project site as a liquefaction prone area, which is likely considered a seismic hazard area under Bellevue Land Use Code. In late November 2019, winter storms resulted in heavy sheet flow that eroded the steep slope by West Lake Sammamish Parkway SE. The flows scoured down beneath an existing stormwater pipe, causing the pipe to collapse in the upland, over 100 feet from Lake Sammamish. Upland damage was repaired by Spring 2020 under a City of Bellevue Declaration of Emergency.

5. Describe the purpose, type, total area and approximate quantities and total affected area of any filling, excavation and grading proposed. Indicate the source of the fill.

The Project's purpose is to restore the beach slope into Lake Sammamish by excavating up to 150 cubic yards of mixed fines, rounded gravels, and cobbles and smoothing the slope so that it matches conditions prior to the sediment deposition.

Up to 11 cubic yards of clean quarries materials will be obtained from approved quarries and transported by barge to the work site. It will be placed by excavator or by hand in the 100-year floodplain mostly above the OHWM of Lake Sammamish to form the energy dissipation pad for the trimmed stormwater outfall. Up to 5 cubic yards of imported Streambed Sediment per WSDOT Spec 9-03.11(1) with a D50 of 1" in size will be placed below the OHWM. This area will be 17' L X 16' W. Material will be placed to a depth of 6 inches and at-grade.

6. Could erosion occur as a result of clearing, construction or use? If so, generally describe.

The potential exists for some erosion to occur during construction. The contractor will manage risk by implementing erosion and sediment control best management practices (BMP) per the Project's SWPPP and TESC Plan to minimize that potential.

7. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Project will not create any new impervious surfa

8. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

A TESC Plan will be prepared prior to construction with BMPs to reduce/control erosion. A weighted silt curtain will be installed below the OHWM to reduce turbidity discharges. The TESC Plan will be modified by the contractor on an as-needed basis as an adaptive management strategy to reduce and control erosion.

## Air

1. What types of emissions to the air would result from the proposal during construction, operation and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, emissions will be generated from construction equipment and workers' vehicles traveling to and from the Project area by barge. Construction activities will result in short-term, construction-related air emissions such as dust and vehicle exhaust. These short-term impacts will be minimized to the best extent practicable. Once the Project is complete, there will not be an increase in emissions.

2. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no off-site sources of emissions or odor that are likely to affect the proposal.

3. Proposed measures to reduce or control emissions or other impacts to air, if any.

The TESC Plan would include BMPs to control air impacts through measures such as covering loads, maintaining machinery in good mechanical condition to minimize exhaust, and encouraging contractors to reduce idling time of equipment and vehicles.

## Water

### 1. Surface Water

- a. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Lake Sammamish is at the Project location. Lake Sammamish is a shoreline of the state. There are no other waterbodies or wetlands on or adjacent to the Project location.

- b. Will the project require any work over, in or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The proposed Project will include in-water work. The WDFW and U.S. Army Corps of Engineers-approved in-water work window is anticipated to be July 16 through December 31. To avoid impacting migrating federally protected salmonids, we propose to conduct in-water work in early October. The contractor will access the site by barge. The barge will have 14-inch spuds for anchoring, which will temporarily impact the substrate of Lake Sammamish. The contractor will then use the barge and a small skiff as needed to isolate the work area with a weighted silt curtain. Fish will be removed by qualified personnel using the most up-to-date versions of the Washington State Department of Transportation's (WSDOT) "Fish Exclusion Protocols and Standards" (WSDOT Fish Exclusion Protocols) and the U.S. Fish and Wildlife Service's (USFWS) "Recommended Fish Exclusion, Capture, Handling, and Electroshocking Protocols and Standards" (USFWS Fish Exclusion Protocols). For conflicting measures, the most conservative approach will be used.

After the area is isolated with fish removed, the contractor will begin sediment removal and mitigation activities in Lake Sammamish. A variety of heavy equipment will be used and stored on the barge when not in use, including a generator, welder or torch, air compressor, excavator, pumps, warning horn while moving the barge, chain saw, handheld grinder, pipe saw, and underwater saw.

Mitigation actions include shortening the stormwater outfall so that it is above the OHWM of Lake Sammamish and installing an energy dissipation pad extending below the OHWM of Lake Sammamish. Debris will be removed from below the Sammamish Beach Club dock and near the Borko dock, both below and above the OHWM. Native species will be planted within 10 feet above the OHWM.

- c. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of the fill material.

The proposed Project will remove up to 150 cubic yards of storm-deposited sediment (sand, silt, and gravel) from Lake Sammamish within the Project area. The contractor will use an excavator from the barge and hand tools in shallow areas. The slope will be smoothed to remove any holes that could cause fish entrapment. Removed sediment will be placed in Super Sacks, drained, tested for contamination, and transported by barge and then by dump truck to approved disposal sites. Up to 5 cubic yards of imported Streambed Sediment, per WSDOT Spec 9-03.11(1) with a D50 of 1" in size and similar in composition to the lakebed, will be placed below the OHWM of Lake Sammamish to extend the outfall dispersion pad to mitigate scour risk. No angular material will be placed waterward of the OHWM.

- d. Will the proposal require surface water withdrawals or diversions? Give a general description, purpose and approximate quantities, if known.

The Project would not require surface water withdrawals or diversions.

- e. Does the proposal lie within a 100-year floodplain? Yes  
If so, note the location on the site plan.

- f. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposed Project does not involve any discharges of waste materials to surface waters.

2. Ground Water

- a. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

The proposed Project will not withdraw groundwater or discharge groundwater.

- b. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

The proposal does not include discharge of waste material to groundwater.

3. Water Runoff (including stormwater)

- a. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Construction could result in incidental runoff from construction equipment and the barge into Lake Sammamish. Post-construction will not result in any new sources of runoff.

- b. Could waste materials enter ground or surface waters? If so, generally describe.

During construction, stormwater with sediment and small amounts of motor oil and hydraulic fuel could enter surface waters if escaping the construction perimeter. Contractors would adhere to BMPs from the TESC Plan to minimize this risk.

- c. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposal will not alter or otherwise affect drainage patterns in the site vicinity.

Indicate any proposed measures to reduce or control surface, ground and runoff water, and drainage pattern impacts, if any.

The Project will not reduce or control surface water, groundwater, or runoff water and drainage pattern impacts. Stormwater BMPs will be used to control stormwater runoff.

**Plants**

1. Check the types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other \_\_\_\_\_
- evergreen tree: fir, cedar, pine, other \_\_\_\_\_
- shrubs
- grass
- pasture
- crop or grain
- orchards, vineyards or other permanent crops
- wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other \_\_\_\_\_
- water plants: water lily eelgrass, milfoil, other \_\_\_\_\_
- other types of vegetation landscaped vegetation \_\_\_\_\_

2. What kind and amount of vegetation will be removed or altered?

Little to no vegetation removal will occur.

3. List any threatened and endangered species known to be on or near the site.

There are no threatened or endangered plant species mapped on or near the site by the Washington National Heritage Program map tool.

4. Proposed landscaping, use of native plants or other measures to preserve or enhance vegetation on the site, if any.

Mitigation actions will include shoreline plantings in the southeast corner of the Bortko property. At least 3 trees (birch, vine maple) and 18 shrubs (Oregon grape, cranberry) will be planted.

- List all noxious weeds and invasive species known to be on or near the site.

Garden loosestrife is present on the Bortko property and an adjacent parcel (Parcel 1224059103) south of the Project site, as mapped by King County iMap 2021 noxious weed layer.

## Animals

- List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

Birds: hawk, heron, eagle, songbirds, other \_\_\_\_\_

Mammals: deer, bear, elk, beaver, other Urban mammals (e.g., mice, cats, dogs) likely

Fish: bass, salmon, trout, herring, shellfish, other \_\_\_\_\_

- List any threatened and endangered species known to be on or near the site.

Chinook salmon and steelhead trout migrate through Lake Sammamish. Bull trout can access the site, but they are unlikely to be present due to elevated water temperatures in Lake Sammamish.

- Is the site part of a migration route? If so, explain.

Yes. Chinook salmon and steelhead trout migrate through Lake Sammamish. The site is also within the Pacific Flyway for migratory birds.

- Proposed measures to preserve or enhance wildlife, if any.

On-site mitigation that will improve habitat conditions includes shortening the stormwater outfall pipe so it is above the OHWM of the lake and removing human-made debris (old railroad ties below the Sammamish Beach Club dock and three wood piles near the Bortko dock).

5. List any invasive animal species known to be on or near the site.

There are no invasive animal species known to be on or near the site. There are no New Zealand Mud Snail observations mapped in the Project vicinity by the City of Bellevue Aquatic Invasive Species Map.

### Energy and Natural Resources

1. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Not applicable. The completed Project will not have any energy needs.

2. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Not applicable. The proposed Project would not affect the potential use of solar energy by adjacent properties.

3. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

As a BMP, operators would avoid unnecessary idling to reduce fossil fuel consumption.

## Environmental Health

1. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste, that could occur as a result of this proposal? If so, describe.

Construction activities will require the use of potentially hazardous substances on the Project site, including gasoline, diesel, motor oil, transmission fluid, hydraulic oil, radiator coolant, brake fluid, and metals used in tires.

- a. Describe any known or possible contamination at the site from present or past uses.

Old rail ties and wood piles are present on-site and may be treated with creosote. The Washington State Department of Ecology's "What's in My Neighborhood" Map does not show any cleanup sites in the Project vicinity.

- b. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no existing hazardous chemicals or conditions that might affect Project development and design. There are no pipelines in the Project area or Project vicinity.

- c. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Construction equipment will require the use of potentially hazardous substances (gasoline, diesel, motor oil, transmission fluid, hydraulic oil, radiator coolant, brake fluid, and metals used in tires). The Project Spill Prevention, Control, and Countermeasure (SPCC) Plan will address the handling of any leaks or spills that could occur. Post construction, no toxic or hazardous chemicals will be stored, used, or produced on the site.

- d. Describe special emergency services that might be required.

No special emergency services are expected as a result of implementing the Project. Construction-related accidents or injuries may require response from local fire, police, or ambulances.

- e. Proposed measures to reduce or control environmental health hazards, if any.

Local, state, and federal regulations regarding safety and handling of hazardous materials will be followed and enforced. Equipment refueling will occur off-site or in areas where a spill could be quickly contained and where the risk of hazardous materials entering surface waters is minimized. The contractor will follow the Project SPCC plan, which will address the handling of any leaks or spills that may occur.

## 2. Noise

- a. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Noise in the Project vicinity includes traffic noise from West Lake Sammamish Parkway and other neighborhood streets.

- b. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)?  
Indicate what hours noise would come from the site.

Short-term noise is anticipated from the use of equipment activities. Construction from the Project is expected to occur from September through November 2021. Construction is anticipated to occur during business hours (8:00 a.m. to 5:00 p.m.) and adhere to the City's Municipal Code requirements. The Project will not create any permanent noise sources.

- c. Proposed measures to reduce or control noise impacts, if any.

Short-term noise from construction activities will be mitigated using BMPs and adhering to the City's noise ordinance. No long-term noise mitigation measures are proposed because the Project will not change existing use.

## Land and Shoreline Uses

1. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The Project is located on two parcels: 122405TRCT (shared between Bellevue Utilities and the Sammamish Beach Club), and 1224059046 (owned by Dennis and Trina Bortko). Parcel 122405TRCT is a maintained utility tract with a large sewage pump station. A stormwater outfall, owned by the City and maintained by the City Utilities Department, extends below the OHWM of Lake Sammamish. The Sammamish Beach Club holds an easement for exclusive waterfront access and recreation. The Sammamish Beach Club uses the beach as an access point for kayaks and other watercraft. Parcel 1224059046, the Bortko property, is a private residence with a maintained lawn and waterfront access. The adjacent properties are residential properties with connections to West Lake Sammamish Parkway SE and waterfront docks. The Project will not affect current land uses on nearby or adjacent properties.

2. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to non-farm or non-forest use?

The Project site has not been used as working farmlands or forest lands. The Project site does not contain any agricultural or forest land.

- a. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling and harvesting? If so, how?

There are no surrounding working farms or forestlands near the Project site.

3. Describe any structures on the site.

Parcel 122405TRCT: At the east parcel boundary, a dock owned by the Sammamish Beach Club extends over Lake Sammamish, with the Bellevue Utilities stormwater outfall beneath it. This 24-inch-diameter corrugated metal pipe collects stormwater runoff from the roadway, which then outlets below the OHWM of Lake Sammamish. The pipe was recently repaired as part of an emergency work project. The Sammamish Beach Club also maintains a storage shed, a kayak rack, a small playground set, a fire pit, and a picnic table. A sewer pump station is located in the southeast corner, outside of the OHWM. The pump station lifts sewer flow from lakeside properties to the gravity sewer system above the shore. At the west parcel boundary, there is a concrete tunnel entrance with a combination of a concrete staircase and a gravel access path to the waterfront. Utility posts and light posts are located along the north and south boundaries. Parcel 1224059046 (Bortko Property): a private residential dock extends into Lake Sammamish on the east parcel boundary, with a covered structure for storing a boat on the water. The Bortko property includes a paved driveway extending from West Lake Sammamish Parkway SE to a one-story house. The property contains the typical utilities for a private residence (water, sewage, electricity, etc.).

4. Will any structures be demolished? If so, what?

The Project will trim the existing stormwater outfall pipe with a pipe saw and then excavate and remove the portion of the pipe that is below the OHWM. Human-made debris will be removed, including old railroad ties below the Sammamish Beach Club dock; two old, untreated wood mooring piles; and one cut untreated wood pile near the Bortko dock. The debris to be removed is located below the OHWM of Lake Sammamish and/or in the 100-year floodplain.

5. What is the current zoning classification of the site? R-3.5 Single Family Residential

6. What is the current comprehensive plan designation of the site? Single family

7. If applicable, what is the current shoreline master program designation of the site?

Shoreline Residential and Recreational Boating

8. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Critical areas mapped in the Project area include shorelines, flood hazard areas, and geological hazard areas (steep slopes and seismic hazard areas). Lake Sammamish is a shoreline of the state that provides habitat for three species of local importance: Chinook salmon, Coho salmon, and bull trout. The Project is within the 100-year floodplain of Lake Sammamish, which is classified as a flood hazard area. The western portion of the Project area includes steep slopes, and the entire site has been mapped as a seismic hazard area.

9. Approximately how many people would reside or work in the completed project? 0

10. Approximately how many people would the completed project displace? 0

11. Proposed measures to avoid or reduce displacement impacts, if any.

Not applicable. There will be no displacement issues as a result of the Project.

12. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

No measures are proposed because there will be no changes to existing or projected land use as a result of the Project.

13. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any.

Not applicable. There are no nearby agricultural or forestlands.

## Housing

1. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable. The Project does not include the construction of any housing.

2. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable. The Project does not include the elimination of any housing.

3. Proposed measures to reduce or control housing impacts, if any.

Not applicable. There will be no housing impacts as a result of the Project; therefore, no measures to reduce or control housing impacts are proposed.

## Aesthetics

1. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The shortened outfall will rest on the ground and the dispersal pad will be flush with the existing ground surface. The trimmed outfall pipe will be a few inches above the ground surface. Both will be located under an existing raised dock/view platform.

2. What views in the immediate vicinity would be altered or obstructed?

No view in the immediate vicinity will be altered or obstructed.

3. Proposed measures to reduce or control aesthetic impacts, if any

The Project will not alter any views or aesthetics in the Project vicinity. There are no proposed measures to reduce or control aesthetic impacts.

## Light and Glare

1. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposed Project does not include any lighting. All construction work will occur during daytime hours.

2. Could light or glare from the finished project be a safety hazard or interfere with views?

Not applicable. The proposed Project does not include any lighting.

3. What existing off-site sources of light or glare may affect your proposal?

There are no known existing off-site sources of light or glare that may affect the proposal.

4. Proposed measures to reduce or control light and glare impacts, if any.

The Project does not include lighting. No measures will be implemented to reduce or control light and glare impacts.

## Recreation

1. What designated and informal recreational opportunities are in the immediate vicinity?

The Sammamish Beach Club property holds an easement for exclusive waterfront access and recreation. The Sammamish Beach Club uses the beach as an access point for kayaks and other watercraft. The Sammamish Beach Club also maintains a small playground set, a fire pit, and a picnic table. Adjacent properties contain waterfront docks for boating and other recreational activities on Lake Sammamish.

2. Would the proposed project displace any existing recreational uses? If so, describe.

The proposed Project would temporarily displace recreational uses at the Sammamish Beach Club during construction. Normal use will be restored upon Project completion. The Project will not result in any permanent displacement of existing recreational uses.

3. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

The Project does not include any measures to reduce or control impacts on recreation. The Project will not have any permanent impacts on recreation.

## Historic and Cultural Preservation

1. Are there any buildings, structures or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state or local preservation registers located on or near the site? If so, specifically describe.

A Jacobs archaeologist conducted a records review of the Area of Potential Effects (APE) and surrounding area on February 11, 2021. See the attached Cultural Resources Assessment for additional details. The records review revealed the existence of seven historic buildings, all single dwellings, and all built between 1930 and 1967. None of these have been nominated for inclusion in the National Register of Historic Places or for state or local registries. There was no record of previously recorded archaeological sites, cemeteries, or areas of cultural importance on or near the Project site.

2. Are there any landmarks, features or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no landmarks, features, or other evidence of Indian or historic use or occupation. There are no materials, evidence, artifacts, or areas of cultural importance on or near the site. See the attached Cultural Resources Assessment for additional details.

3. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

A Jacobs archaeologist conducted a records search for previously documented historic and archaeological resources within a 0.5-mile radius of the APE using the Washington Information System for Architectural and Archaeological Records Data (WISAARD). WISAARD contains all cultural resources documents submitted to the Washington State Department of Archaeology and Historic Preservation (DAHP) since 1995. See the attached Cultural Resources Assessment for additional details.

4. Proposed measures to avoid, minimize or compensate for loss, changes to and disturbance to resources. Please include plans for the above and any permits that may be required.

The following measures are proposed to avoid, minimize, or compensate for loss, changes to and disturbance to any resources discovered during construction. In the event that archaeological materials are discovered during construction, the Project proponent and/or contractor will be required to halt excavations in the vicinity of the find, have a qualified archaeologist assess the significance of the archaeological deposits discovered during construction, and contact the City and DAHP. If human skeletal remains are discovered, the King County Sheriff and DAHP must be notified immediately. See the attached Cultural Resources Assessment for additional details.

## Transportation

1. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is served by West Lake Sammamish Parkway SE, which is located to the west of the Project site. West Lake Sammamish Parkway SE connects to Interstate 90, approximately 5 miles south of the Project site. West Lake Sammamish Parkway SE will be used for construction access.

2. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The geographic area is currently served by public transit. The site is approximately 0.5 mile from a bus stop located at the intersection of 168th Avenue SE and SE 23rd Place. This bus stop is served by King County Metro Bus Route 221, which provides service to the Eastgate Park and Ride and the Redmond Transit Center.

3. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

There will be no additional parking spaces created or eliminated by the Project. Construction work crews will arrive on-site by boat or will utilize shoulder parking along West Lake Sammamish Parkway SE.

4. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The Project will not require any new transportation facilities or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities.

5. Will the project or proposal use (or occur in the immediate vicinity of) water, rail or air transportation? If so, generally describe.

The Project will not require the use of water, rail, or air transportation. Barge use during construction may have temporary, minor affects on nearshore use by watercraft.

6. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

The completed Project is not anticipated to generate an increase in vehicular trips.

7. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The Project will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

8. Proposed measures to reduce or control transportation impacts, if any.

There are no measures proposed to reduce or control transportation impacts as the Project will not result in any impacts to transportation.

## Public Service

1. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The Project will not change the site use; therefore, no change in need for public services is anticipated.

2. Proposed measures to reduce or control direct impacts on public services, if any.

There are no measures proposed to reduce or control direct impacts on public services.

## Utilities

1. Check the utilities currently available at the site:

- Electricity
- natural gas
- water
- refuse service
- telephone
- sanitary sewer
- septic system
- other

2. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.

No new utilities are proposed for the Project. The Project will improve existing City stormwater infrastructure.

**Signature**

*The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.*

Signature Abe Santos

Name of signee Abe Santos

Position and Agency/Organization Senior Engineer/PM/ City of Bellevue Utilities

Date Submitted 3/16/2021

**Cultural Resources Assessment Technical Memorandum  
2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project**

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To: Abelardo Santos, Project Manager, City of Bellevue Utilities Department

From: Michael Shropshire, Archaeologist  
Michael Chidley, Senior Archaeologist

Date: February 26, 2021

Subject: **2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project - Cultural Resources Assessment**

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### INTRODUCTION

The purpose of this memorandum is to provide a cultural resources assessment to support compliance with the National Historic Preservation Act of 1966 (NHPA), as amended, with regard restoration of the beach slope into Lake Sammamish and associated mitigation, including shortening the stormwater outfall pipe, installing an energy dissipation pad, removing human-made debris from below and above the OHWM of Lake Sammamish, removal of three mooring piles, and planting native vegetation along the shoreline.

This technical memorandum documents the findings from a cultural resources review of the area of potential effect (APE) and assesses the potential for historic properties to be present on the property.

### PROJECT LOCATION

The 2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project (Project) is located at 2442 West Lake Sammamish Parkway SE, Bellevue, WA 98008 (within Section 13, Township 24N, Range 5E). The project site is on the west shore of Lake Sammamish, approximately 3.6 miles southeast of downtown Bellevue. The project site is composed of two parcels: 122405TRCT (shared between Bellevue Utilities and the Sammamish Beach Club) and 1224059046 (owned by Dennis and Trina Bortko), as well as a public tract in Lake Sammamish. **Attachment A** provides vicinity maps and associated plans for reference.

### PROJECT BACKGROUND

In November 2019, winter storms resulted in heavy stormwater runoff that eroded the steep slope by West Lake Sammamish Parkway SE. The flows scoured down beneath an existing stormwater pipe, causing the pipe to collapse, damaging the community pedestrian beach access and neighboring dock usage due to hillside erosion and deposition of the eroded sediment in Lake Sammamish. The City of Bellevue (City) issued a Declaration of Emergency to repair the damaged pipe and stabilized the upland area in late 2019/early 2020.

No in-water work occurred at this time because the United States Army Corps of Engineers (USACE) determined that the situation did not satisfy USACE emergency criteria. The City instead

secured a Clean Water Act Section 404 Nationwide Permit (NWS-2020-513) in early October 2020. At the time, informal coordination indicated that a cultural resource assessment would not be required by USACE to issue the nationwide permit. However, the issued nationwide permit indicates that the applicant (the City) must still be compliant with NHPA Section 106. The initial City Declaration of Emergency also expired, and both SEPA review (including a cultural resources review) and local City permits are now required for this next project phase.

## **PROJECT DESCRIPTION**

This Project will include the mitigation improvements for the emergency repair work, including excavation of up to 150 cubic yards of mixed fines, rounded gravels, and cobbles to smooth the beach slope so that it matches conditions prior to the sediment deposition from the failed storm drain.

Based on coordination with the Washington Department of Fish and Wildlife (WDFW), the City also proposes to mitigate for impacts by shortening the stormwater outfall and installing an energy dissipation pad upland of the OHWM of Lake Sammamish, removing human-made debris, and planting native vegetation along the shoreline in the southeast corner of the Bortko property (**Figure 1**).

Construction is scheduled to begin in September 2021 and end in November 2021. In-water work is scheduled for October 2021.

## **AREA OF POTENTIAL EFFECTS**

The APE was delineated by Jacobs on behalf of the City to include the horizontal and vertical extent of all proposed project activities. The proposed APE for this project is defined as the extent of anticipated or potential ground disturbance. The proposed work is limited to sediment removal, limited excavation, pile removal, and planting and restoration, which do not significantly alter the existing shoreline conditions through increased use or function, construction of new large structures, or additional illumination. Therefore, the APE does not extend beyond the immediate project area as defined. The APE is defined as the limit of the proposed silt curtain, extent of upland sediment removal, and extent of the proposed outfall energy dissipation pad. As proposed, the APE encompasses a total area of 0.57 acre, although the actual area of planned ground-disturbing work is much less in extent and largely occurs below the OHWM.

**Figure 1. Overview of APE, with existing outfall beneath the Sammamish Beach Club dock (center) and deposited sediment piled against Bortko dock (right).**



## ARCHAEOLOGICAL CONTEXT

Archaeological evidence of early human occupation in the Puget Sound starts with the Paleoindian people and the common tool tradition of the time known as Clovis. The Clovis tool tradition first appeared regionally at the end of the last glacial maximum in the late Pleistocene (prior to 12,500 years before present [BP]). The Paleoindian period was followed by four other periods: the Archaic period (12,500 to 6400 years BP), Early Pacific (6400 to 3800 years BP), Middle Pacific (3800 to 1800/1500 years BP), and Late Pacific (1800 years BP to approximately 250 years BP). Finally, the historical period spans approximately 1750 to present, when Euroamericans encountered indigenous populations and settled in the area.

Paleoindian presence in western Washington is sparse, consisting of approximately a dozen isolated Clovis-style fluted projectile points. Clovis is a technological complex widely regarded as the oldest in North America, dating from 12,800 to 12,500 years BP, although no concrete timeframe has been confirmed for the western Washington region due to lack of complementary assemblages (Dixon 2001; Hutchings 1997). The scarcity of archaeological evidence of human occupation in the Pacific Northwest prior to the middle Holocene may be in part due to geological events that submerged or buried sites.

Larger sites dating to the Archaic Period (circa 12,500 to 6,400 years BP) are observable in greater frequencies, with the earliest evidence dating back to a site (45KI839) in the Puget Sound region on Little Bear Creek in Redmond, and the DeStaffany Site (45SJ414) on San Juan Island. The Bear Creek site is typified by fragmented large projectile points within a peat deposit dating to roughly 8500 years BP (Kopperl et al. 2009), while the DeStaffany Site is characterized by lanceolate projectile points and cutting tools dated between 10,800 and 8000 years BP (Kenady et al. 2007). However, a recent examination of the Destaffany Site assemblage, suggests the artifacts are more towards the former than the latter and potentially coeval with Clovis-aged artifacts (Kenady et al. 2008).

A common site type observed in the Puget Sound region during the Archaic period is an Olcott phase site. This phase occurred approximately 10,000 to 7600 years BP and is typified by utilitarian cobble tools and Cascade-style, leaf-shaped projectile point assemblages. Sites in the Olcott phase are generally located near small streams on upland terraces (Kidd 1964; Matson 1976). It is likely that riverine environments were used as well, but archaeological evidence in these areas is sparse due to the geologically dynamic landscape.

The trend of increasing observable archaeological site size and frequency between the Pleistocene and Holocene continues through the Early Pacific period, with greater expressions of ethnographic lifeways. Sites of this period in the Puget Sound region demonstrate a greater reliance on marine and littoral resources based on the presence of shell middens and frequency of habitation in estuarine environments. This is likely a product of the stabilization of sea levels, which may have submerged older evidence of habitation during the period of transgression, as there have been no shell middens discovered that date before 5000 years BP. Site 45PI72, in Pierce County, is the earliest dated shell midden in the Southern Puget Sound region (Wessen

1989). Site 45PI72 was a short-term use location with evidence suggesting a reliance on intertidal species and local terrestrial resources showing an expansion of subsistence patterns.

The Middle Pacific period, dating from approximately 3800 to 1500 years BP, saw the expansion of cultural patterns in the Pacific Northwest, including artistic expressions consistent with ethnographic documentation and social stratification in permanent occupations. Large village sites in riverine and littoral settings were comprised of large wooden planked houses, a hallmark of organized populations. Moreover, evidence of evolving populations into organized societies are depicted in the resource procurement strategies of which include the drying and storing of surplus foodstuffs and the utilization of specialized seasonal camps functioning as an appendage of the village. Furthermore, technologically complex tools such as fish weirs and toggle harpoons found in this period indicate an intensification and diversification of resource gathering. The villages are interpreted as indicators of aggregating winter populations with a heavy reliance on salmon. An example of such sites is Tualdad Altu (45KI59), also known as "King Salmon's House," in Renton. Tualdad Altu is a village site consisting of approximately 60-foot-long houses used for annual occupation around 1500 years BP (Chatters 1987). The site was in a prime location for salmon procurement, which, once acquired, was dried and preserved for winter consumption. It is around this time frame that art styles began to reflect the traditional ethnographic Northwest Coast styles and an increase in personal adornment in the presence of beads and bracelets was observed. Trading also brought influence from the coastline and east of the Cascades to the inner Puget Sound peoples' art and technologies (Ames and Maschner 1999).

The Late Pacific period (1800 years BP to approximately 250 BP) in the Pacific Northwest was similar to the Middle Pacific period with exception of regional-scale warfare. Additionally, there are evolving highly variable burial customs and soaring regional populations in permanent "large communal living structures" (Elder et al. 2011).

## **ETHNOGRAPHIC CONTEXT**

The Southern Coast Salish were a territory of people who were divided by the dialect of Salishan language they spoke. The three divisions of language were Twana, covering part of the Olympic Peninsula and Hood Canal; Southern Lushootseed, ranging from the general Puget Sound region well into the Cascade Mountain range to the east; and Northern Lushootseed, an area extending from modern Seattle to Samish Bay. The APE falls within the territory of the Southern Lushootseed-speaking peoples, and most likely that of the Sammamish people, who are recorded as living in the area between Lake Sammamish and Lake Washington. The Sammamish people were also referred to as the Lake Duwamish people. However, much like the surrounding inhabitants of what became known as Puget Sound, the specific territory of each group was ambiguous; no borders were formerly drawn until the 1854–1855 treaties. The Sammamish are now represented by the members of the Snoqualmie Tribe, Muckleshoot Tribe, and Tulalip Tribes (Ruby and Brown 1992; Smith 1940; Suttles and Lane 1990; Waterman 2001).

Generally, Southern Coast Salish populations inhabited areas around rivers and creeks during spring, summer, and fall to acquire resources (such as salmon) to be preserved and stored for winter (Haeblerlin and Gunther 1930; Castille 1985). Shelters for spring, summer, and fall

seasonal encampments were built with portable, lightweight mats made from marsh plants and generally housed small family groups. Winter shelters were more permanent, larger structures that could be used annually; they consisted of large wooden plank houses that could accommodate larger groups. A winter village would typically consist of multiple plank houses that were often organized by social status (Ames and Maschner 1999).

During the winter, much of an individual's time was village-focused and involved preparing for, or participating in, spiritual ceremonies because stored food from the previous seasons often provided ample sustenance (Haeberlin and Gunther 1930). The additional free time that food storage allowed also ushered in the evolution of Salish-style artwork, which is known for its intricate and graceful carvings, longhouse murals, and basketry that depict ancestors as well as real and mythological creatures (Suttles and Lane 1990).

Riverine-based Coast Salish groups often traveled by canoe, with several different styles based on the transportation routes. Along these transportation routes were coastal Salish villages at access points where canoes could easily moor (Suttles and Lane 1990). Canoes and other cultural materials such as cordage, baskets, clothing, mats, towels, mattresses, and even seasonal huts were made with western redcedar (*Thuja plicata*). Other cultural materials include intricate blankets woven from the hair of a now-extinct wooly dog, mountain goat wool, waterfowl down, and fireweed cotton (Suttles and Lane 1990).

## RECORDS REVIEW

Jacobs archaeologists Michael Shropshire conducted a records search for previously documented historic and archaeological resources within a half-mile radius of the APE using the Washington Information System for Architectural and Archaeological Records Database (WISAARD). WISAARD contains all cultural resource documents submitted to the Department of Archaeology and Historic Preservation (DAHP) since 1995.

No cultural resources have been recorded within the APE., although it has not been specifically surveyed. No archaeological resources have been recorded within a half-mile of the project. Seven historic resources have been found within a half-mile of the project area. All of these are single dwellings, and all were built between 1930 and 1967. None of these have been nominated for inclusion in the National Register of Historic Places or for State or local registries.

## EXPECTATIONS

Expectations for where archaeological sites could potentially be located are based upon environmental data and the relationship of that data to our understanding of human behavior. Precontact human habitation was dependent on the availability of water and the ease with which resources could be transported. Consequently, many habitation areas were likely located along river and lake margins. Landscape modification methods, including the removal of sediment, construction of modern infrastructure, and maintenance of facilities, have a deleterious effect on archaeological site preservation and visibility. By understanding these effects, expectations about archaeological potential can be generated and then used to inform archaeological

investigation strategies to identify where intact archaeological deposits are most likely to be present.

The proposed APE is characterized by a freshwater lake shoreline that has been heavily influenced by the development of the shoreline during installation of docks, excavation and installation of stormwater infrastructure, and maintenance of the beach as a recreational facility. Although originally the shoreline may have had a relatively high potential for archaeological occupation and/or use, the construction of facilities and maintenance of the property have largely diminished that potential. The current conditions suggest a low potential for significant cultural resources within the proposed APE.

## CONCLUSIONS

As noted above, the proposed project will be undertaken within an area that has been subject to previous ground disturbance during the construction of stormwater infrastructure, the installation of docks, and pile setting, as well as original clearing and grading. In addition, the proposed work is limited to sediment removal work intended to restore the APE to its recent condition and ground surfaces prior to the landslide, modify/shorten an existing stormwater outfall, and create small outfall energy dissipation pad at that existing outfall.

Based on the presence of the historical and modern landscape modifications in the proposed APE, there is a limited potential for intact and/or significant archaeological sites or built environment historic properties in the APE. Given the very limited archaeological potential, actions intended to restore conditions and modify existing stormwater infrastructure, and otherwise limited scope of work, it is recommended *the project will have no effect to historic properties*.

No archaeological resources were identified within the APE, nor is their presence likely. However, in the event that archaeological materials are discovered during construction, the project proponent and/or contractor is required to halt excavations in the vicinity of the find, have a qualified archaeologist assess the significance of the archaeological deposits discovered during construction, and contact the City and the Department of Archaeology and Historic Preservation (DAHP). If human skeletal remains are discovered, the King County Sheriff and DAHP must be notified immediately.

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**ATTACHMENT A**  
**Vicinity Map and Project Plans**



# CITY OF BELLEVUE

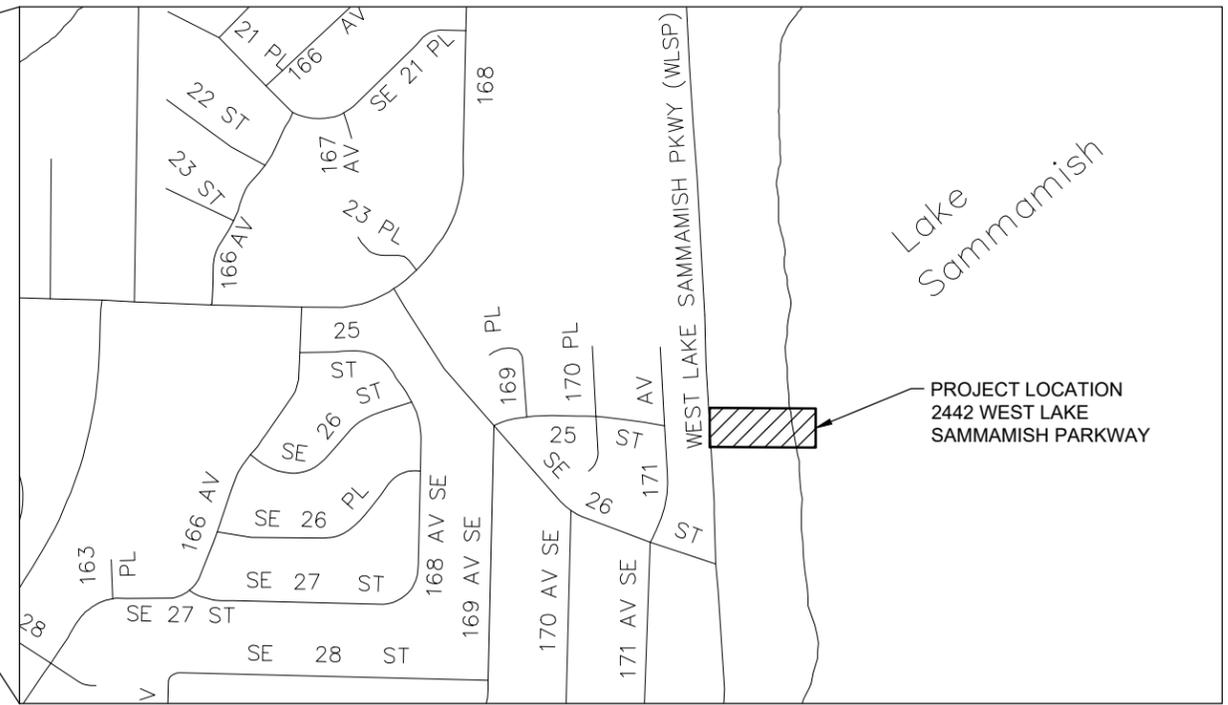
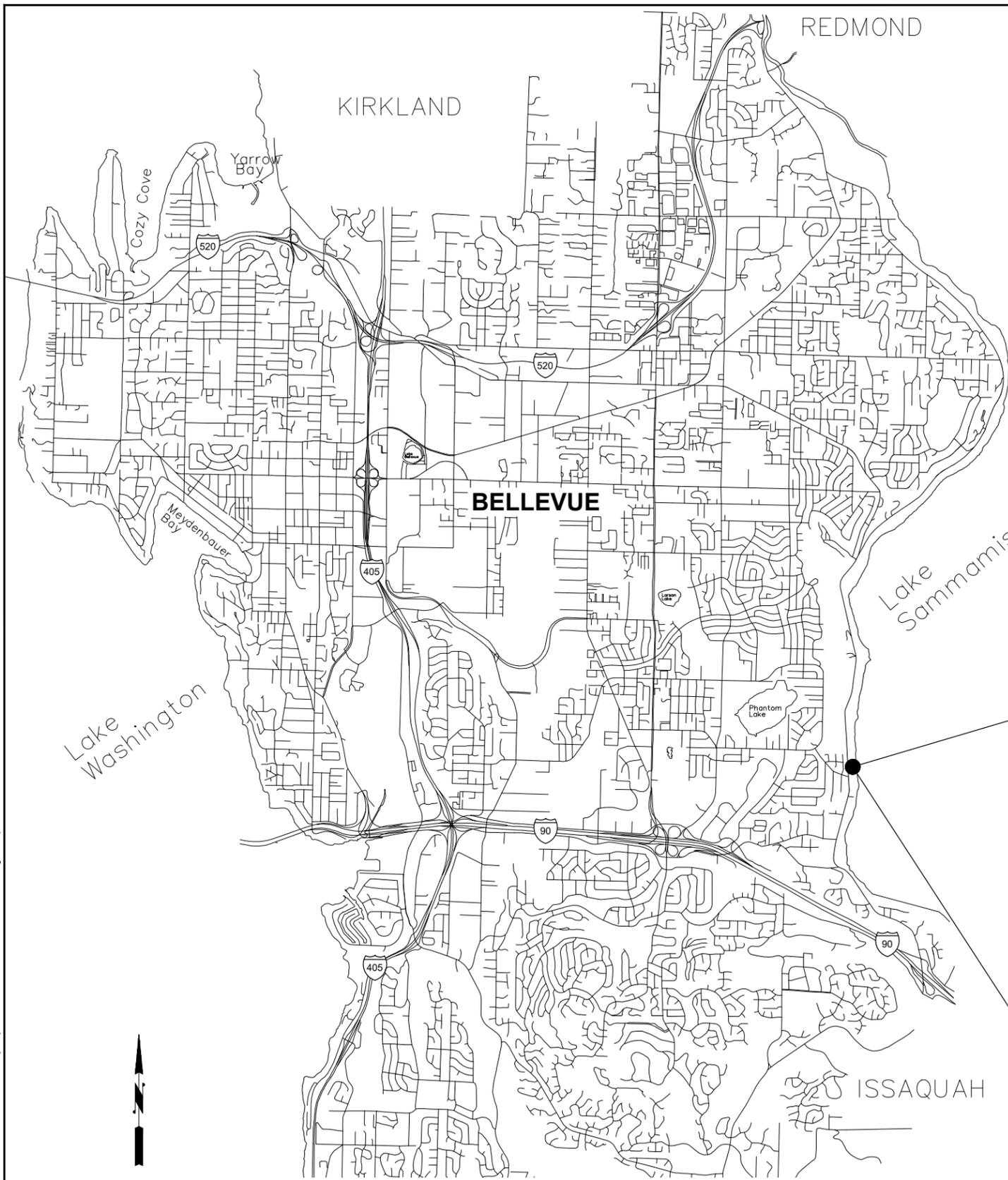
## UTILITIES DEPARTMENT

# 2442 WLSP SINKHOLE LAKE RESTORATION

PREPARED BY JACOBS, 1100 112TH AVE. NE, SUITE 500, BELLEVUE, WA 98004  
PHONE: 425.453.5000

### DRAWING INDEX

SHT#	DWG#	TITLE
1	G-001	COVER SHEET, LOCATION MAP AND DRAWING INDEX
2	G-002	GENERAL NOTES AND SYMBOLS
3	C-101	SITE PLAN
4	C-102	PLANTING PLAN
5	C-103	SEDIMENT REMOVAL PLAN
6	C-201	OUTFALL SECTION AND DETAILS
7	C-301	PLANTING DETAILS
8	C-302	CESC DETAILS



**LOCATION MAP**  
NTS

Location: C:\pwworking\den003\ch2\mhill\_diyong\vd1107954  
Dwg File: G-001.dwg  
Layout: Layout  
Plot By: Yang, Jan/SEA  
Plot Date: 3/24/2021 8:46 AM

NO	DATE	BY	APPR	REVISIONS



### Approved By

XXX CONSTRUCTION INSPECTOR DATE X  
XXX PROJECT MANAGER DATE X

P. BOMBER MARCH 2021  
DESIGNED BY DATE  
J. YANG MARCH 2021  
DRAWN BY DATE  
J. WILLIAMS MARCH 2021  
CHECKED BY DATE



**2442 WLSP SINKHOLE LAKE RESTORATION**  
CITY OF BELLEVUE  
WASHINGTON

**GENERAL**  
**COVER SHEET, LOCATION MAP AND DRAWING INDEX**

DWG NO. G-001 SHT 1 OF 8

BAR IS ONE INCH ON ORIGINAL DRAWING  
SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14

90% REVIEW

**GENERAL NOTES:**

1. THE OHWM FOR LAKE SAMMAMISH IS 31.8 FT NAVD88 (28.18 FT NGVD29). THE OHWM SHOWN ON THESE DRAWINGS IS ESTIMATED BASED ON 2016 LIDAR.
2. REMOVE SEDIMENT AS INDICATED ON THE DRAWINGS, NOT TO EXCEED 150 IN-SITU CY.
3. REMOVE SEDIMENT AND SMOOTH LAKE BED SLOPE TO MATCH PREEXISTING CONDITIONS OR AS DETERMINED IN COORDINATION WITH FIELD ENGINEER.
4. NO DEBRIS, REFUSE, TRASH, EXCAVATED MATERIAL, DEMOLISHED MATERIAL, OR OTHER FOREIGN MATERIALS OR OBJECTS MAY BE BURIED ON THE SITE OR LEFT IN THE LAKE. REMOVE ALL SUCH MATERIAL FROM THE SITE AND FROM THE LAKE AND DISPOSE OF IN A SAFE AND LEGAL MANNER.
5. PROTECT IN PLACE ALL EXISTING IMPROVEMENTS NOT OTHERWISE NOTED FOR REMOVAL.
6. INSTALL AND MAINTAIN CONSTRUCTION STABILIZATION AND EROSION CONTROL PER CITY STANDARD NOTES AND DETAILS ON DRAWING C-302.

**SURVEY NOTES:**

1. PROVIDE BOUNDARY SURVEY BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF WASHINGTON TO ESTABLISH PROPERTY CORNERS FOR THE PROJECT SITE.
2. LAND SURVEYING MUST BE PERFORMED AND RECORDED TO NAVD 88 VERTICAL DATUM AND NAD 83 HORIZONTAL DATUM.
3. PROVIDE A PRIVATE LOCATING FIRM TO PERFORM SUBSURFACE UTILITY INVESTIGATION WITHIN THE PROJECT LIMITS. MARK AND PROTECT IN PLACE ANY EXISTING UTILITIES IDENTIFIED WITHIN THE PROJECT LIMITS.
4. FIELD LOCATE WHERE THE ORDINARY HIGH WATER MARK ELEVATION OF 31.8 FT CROSSES THE EXISTING GROUND, AND STAKE THIS LOCATION AT THE PROPERTY BOUNDARIES AND AT NOT MORE THAN 15 FT INTERVALS BETWEEN. STAKE WITH NEW 2 INCH BY 2 INCH WOODEN STAKES, NOT LESS THAN 2 FEET IN LENGTH, DRIVEN FLUSH TO THE EXISTING GROUND SURFACE AND MARKED WITH 4 FOOT TALL WOODEN LATHE MARKED OHWM. STAKES REMOVED BY THE CONTRACTOR'S ACTIVITIES OR BY GRADING SHALL BE REESTABLISHED BY LICENSED PROFESSIONAL LAND SURVEYOR PRIOR TO FURTHER EXCAVATION OR SEDIMENT REMOVAL.
5. PROVIDE TOPGRAPHIC/BATHEMETRIC SURVEY OF THE PROJECT SITE AFTER PLANTING AND SEDIMENT REMOVAL, NOTING THE LOCATION AND ELEVATION OF THE LIMITS OF PLANTING AND GRAVEL REMOVAL. ALSO PROVIDE FINISHED GRADE ELEVATIONS ESTABLISHED BY A GRID PATTERN OF 10 FEET BY 10 FEET WITHIN THE LIMITS OF SEDIMENT REMOVAL.

**FENCE NOTES:**

1. PROVIDE TURBIDITY BARRIER TO MEET SITE TURBIDITY LIMITS.
2. PROVIDE TEMPORARY CONSTRUCTION FENCE FOR SITE SAFETY AND TO PREVENT PUBLIC ACCESS TO WORK SUCH AS PILE REMOVAL, SEDIMENT AND DEBRIS REMOVAL, PIPE CUTTING, OPERATION OF EQUIPMENT, ETC.

**ACCESS NOTES:**

1. NO VEHICULAR OR EQUIPMENT ACCESS IS ALLOWED TO THE SITE FROM WEST LAKE SAMMAMISH PARKWAY OR ADJACENT PROPERTY, EXCEPT TO DELIVER CONSTRUCTION FENCING, PLANTS AND ESTABLISH SURVEY CONTROL.
2. ALL MATERIAL DELIVERY, CONSTRUCTION EQUIPMENT DELIVERY, SEDIMENT REMOVAL AND MATERIAL REMOVAL MUST BE PROVIDED VIA BARGE OR BOAT FROM THE LAKE.
3. OBTAIN, MAINTAIN, AND ADHERE TO REQUIREMENTS OF LAKE SAMMAMISH STATE PARK SPECIAL USE PERMITS AS APPLICABLE.

**PIPE REMOVAL NOTES:**

1. CUT PIPE PERPENDICULAR TO CENTERLINE OF PIPE.
2. REMOVE CUT PIPE AND ANY ASSOCIATED DEBRIS AND DISPOSE OF OFFSITE IN A SAFE AND LEGAL MANNER.
3. REMOVE BURRS, PROTRUSIONS, OR SHARP EDGES.

**ABBREVIATIONS:**

APPROX	APPROXIMATE
BOHWM	BELOW ORDINARY HIGH WATER MARK
CESC	CONSTRUCTION EROSION AND SEDIMENTATION CONTROL
CY	CUBIC YARD
DIA	DIAMETER
ELEV	ELEVATION
IN	INCH
LB	POUND
MIN	MINIMUM
OHWM	ORDINARY HIGH WATER MARK
SF	SQUARE FEET
SQ	SQUARE
TYP	TYPICAL
WAC	WASHINGTON ADMINISTRATIVE CODE

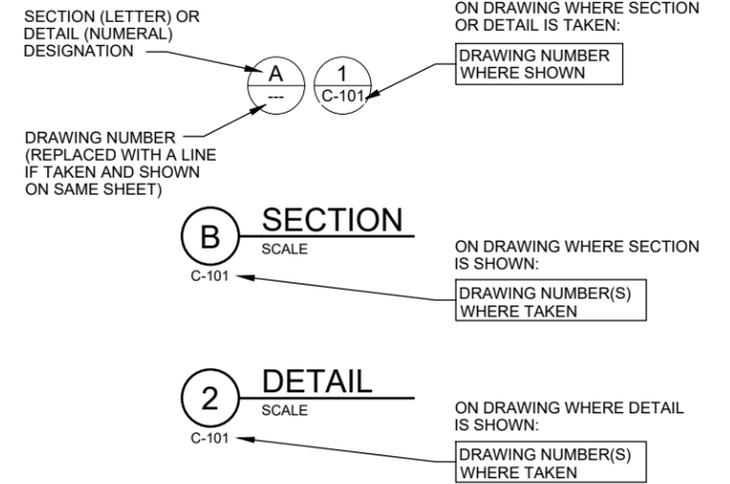
**GRADING NOTES:**

1. SEDIMENT WAS DEPOSITED ON THE BEACH AND SHORELINE IN 2019 AND 2020. THE GOAL OF THIS WORK IS TO REMOVE SEDIMENT DEPOSITS AND PERFORM FINE GRADING IN ORDER TO RE-ESTABLISH THE ORIGINAL SHORELINE, LAKE BED AND BEACH ELEVATIONS (THE PREEXISTING CONDITION).
2. ESTIMATES OF THE ORIGINAL GROUND ELEVATION (PREEXISTING CONDITION), AS WELL AS THE LOCATION AND THICKNESS OF SEDIMENT DEPOSITS INDICATED ON THESE DRAWINGS (EXISTING CONDITION), WERE MADE IN APRIL, 2020. SEDIMENT MAY HAVE MOVED OR CHANGED AFTER THESE MEASUREMENTS WERE MADE; ESTABLISH THE OHWM AND CONFIRM LOCATION AND DEPTH OF SEDIMENT REMOVAL PRIOR TO EXCAVATION.

**CESC AND TURBIDITY MONITORING NOTES:**

1. IMPLEMENT BEST MANAGEMENT PRACTICES AND PROVIDE CESC MEASURES AS REQUIRED TO LIMIT SEDIMENTATION AND TURBIDITY TO ACCEPTABLE LIMITS.
2. PREPARE, IMPLEMENT, AND MAINTAIN A TURBIDITY MONITORING PLAN IN ACCORDANCE WITH CITY OF BELLEVUE CLEARING AND GRADING DEVELOPMENT STANDARDS CG3-03.3.
3. PERFORM TURBIDITY MONITORING AND REPORTING, IN ACCORDANCE WITH THE STATE SURFACE WATER QUALITY STANDARDS (WAC 173.201A-200), TO CONFIRM TURBIDITY DOES NOT EXCEED ACCEPTABLE LIMITS.

**SECTION / DETAIL DESIGNATIONS**

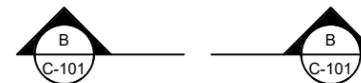


**DRAWING TITLE**  
SCALE

ON DRAWING WHERE ONLY A TITLE IS REQUIRED WITH NO REFERENCE (eg: ELEVATIONS)



SECTION CALLOUT WHERE SECTION IS ON THE SAME SHEET AND CUT EXTENDS TO A FIXED LIMIT



SECTION CALLOUT WHERE SECTION IS ON ANOTHER SHEET AND CUT EXTENDS THROUGHOUT ENTIRE SHEET



NORTH ARROW; CAN BE MODIFIED TO INCLUDE MAGNETIC NORTH ALONG WITH PROJECT NORTH



KEYNOTE NUMBER



REVISION / ADDENDA NUMBER

NO	DATE	BY	APPR	REVISIONS



**Approved By**

XXX CONSTRUCTION INSPECTOR DATE X  
 XXX PROJECT MANAGER DATE X

P. BOMBER MARCH 2021 DESIGNED BY DATE  
 J. YANG MARCH 2021 DRAWN BY DATE  
 J. WILLIAMS MARCH 2021 CHECKED BY DATE



**2442 WLSP SINKHOLE LAKE RESTORATION**  
 CITY OF BELLEVUE WASHINGTON

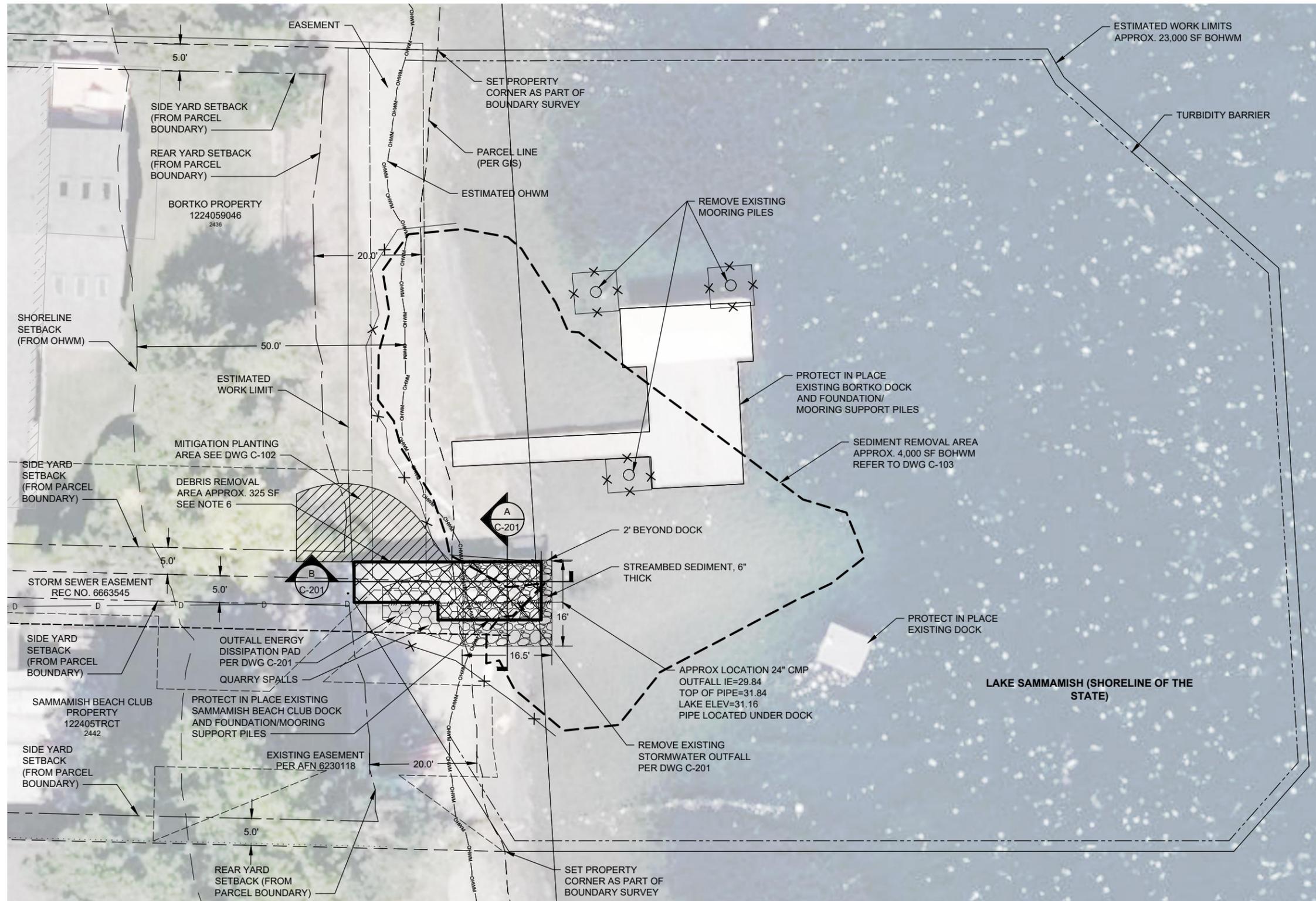
**GENERAL NOTES AND SYMBOLS**

DWG NO. **G-002** SHT **2** OF **8**

BAR IS ONE INCH ON ORIGINAL DRAWING  
 SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14  
 90% REVIEW

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 Plot By: Yang, Jan/SEA

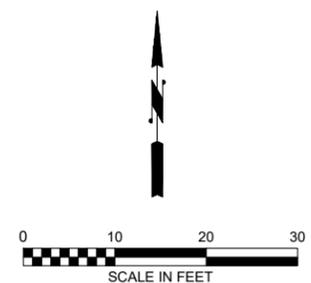
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 Dwg File: C-101.dwg  
 Layout: Sheet 1  
 Plot Date: 4/7/2021 8:20 AM  
 Plot By: Bomber, Paul



**SITE PLAN**  
 SCALE: 1"=10'-0"

- NOTES:**
1. LOCATION OF EXISTING MOORING PILES TO BE REMOVED IS APPROXIMATE. CONFIRM LOCATION WITH RESIDENT ENGINEER PRIOR TO REMOVAL.
  2. THE SITE IS WITHIN THE CRITICAL AREAS OVERLAY DISTRICT. THE ENTIRE SITE (LANDWARD OF THE OHWM) IS WITHIN A LIQUEFACTION HAZARD AREA (CITY OF BELLEVUE AND WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (WDNR) WASHINGTON GEOLOGIC INFORMATION PORTAL). ENTIRE SITE IS ALSO WITHIN THE 100-YEAR FLOODPLAIN (FEMA PANEL 53033C0680G).
  3. ENTIRE SITE IS WITHIN THE SHORELINE OVERLAY DISTRICT, WITH SHORELINE RESIDENTIAL LANDWARD OF THE OHWM AND RECREATION BOATING WATERWARD.
  4. GEOLOGIC HAZARD AREAS, FREQUENTLY FLOODED AREAS, AND SHORELINE OVERLAY AREAS ARE NOT SHOWN FOR SITE PLAN CLARITY.
  5. THIS SITE IS NOT SURVEYED. ALL FEATURES ARE ESTIMATED FROM A COMBINATION OF PARTIALLY SURVEYED FEATURES, AS-BUILT RECORDS, AND AERIAL IMAGERY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL EXISTING AND PROPOSED FEATURES SHOWN ON PLAN.
  6. DEBRIS IS LOCATED BELOW DOCK AND CONSISTS OF THREE RAILROAD TIES AND MISC METAL WIRE FENCING.

- LEGEND**
- OHWM — OHWM (BASED ON LIDAR)
  - - - - - EXISTING PROPERTY LINE
  - - - - - EXISTING DRAINAGE OUTFALL
  - - - - - SEDIMENT REMOVAL AREA
  - - - - - EXISTING STRUCTURE
  - - - - - UTILITY REMOVAL
  - - - - - WORK LIMITS
  - - - - - EASEMENT
  - - - - - STRUCTURE SETBACK
  - - - - - SHORELINE OVERLAY SETBACK
  - ✕ TEMPORARY CONSTRUCTION FENCE



UTILITY GRID # F-14  
 SEC 17 TWP 24N RGE 5E  
 BAR IS ONE INCH ON ORIGINAL DRAWING

NO	DATE	BY	APPR	REVISIONS



**Approved By**

XXX CONSTRUCTION INSPECTOR DATE \_\_\_\_\_ X

XXX PROJECT MANAGER DATE \_\_\_\_\_ X

P. BOMBER MARCH 2021  
 DESIGNED BY DATE

J. YANG MARCH 2021  
 DRAWN BY DATE

J. WILLIAMS MARCH 2021  
 CHECKED BY DATE

**CITY OF BELLEVUE WASHINGTON**

**2442 WLSP SINKHOLE LAKE RESTORATION**

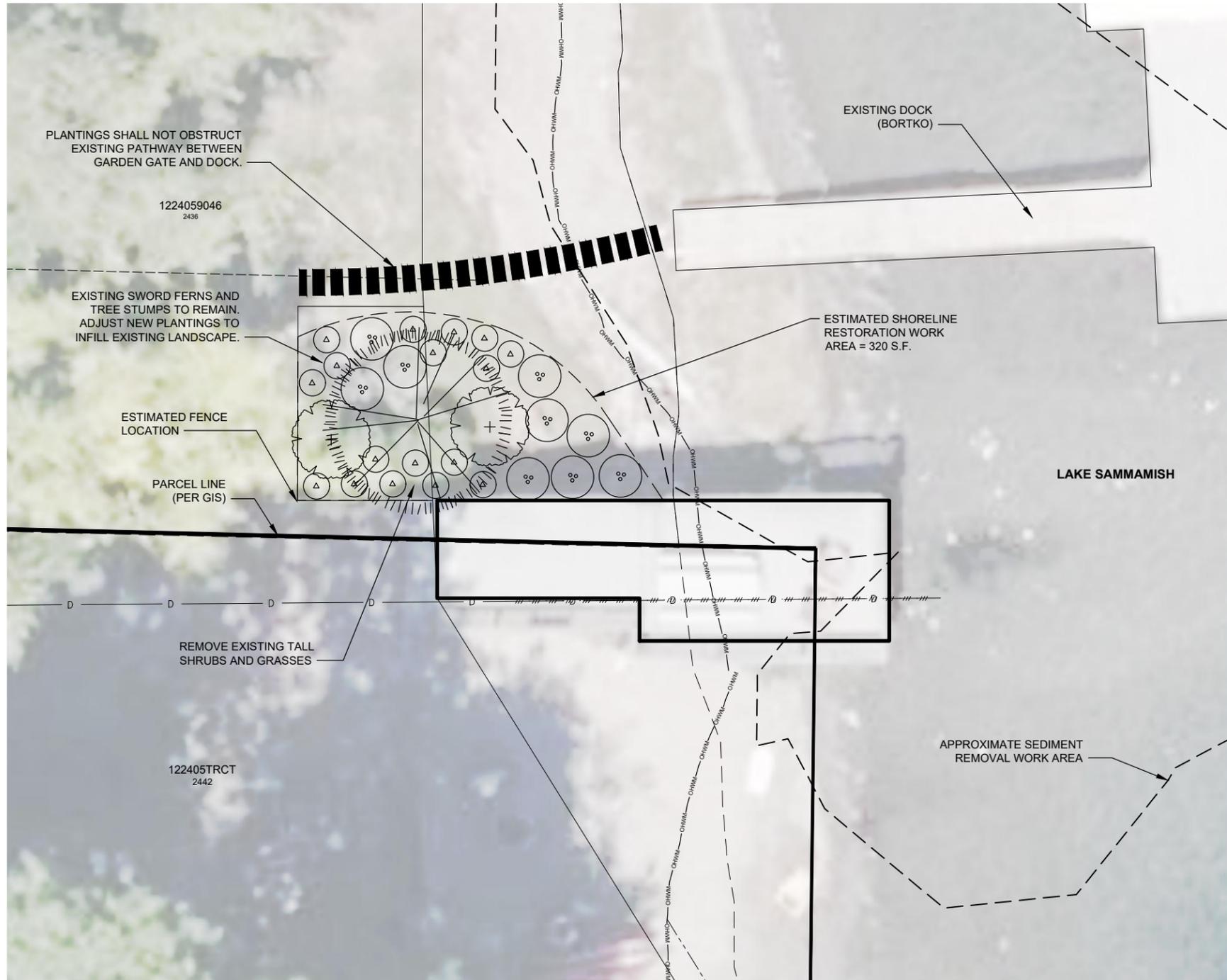
CITY OF BELLEVUE WASHINGTON

**CIVIL**

**SITE PLAN**

DWG NO. C-101 SHT 3 OF 8

**90% REVIEW**



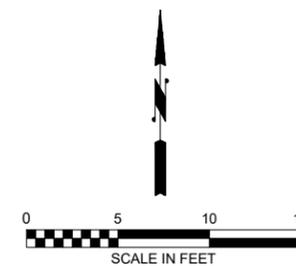
- NOTES:
1. ESTIMATED OHWM IS LOCATED AT 31.8 FT NAVD88 (28.18 FT NGVD) BASED ON 2016 LIDAR. STAKE OHWM PER SURVEY NOTES ON DRAWING G-002.
  2. THE SITE IS NOT SURVEYED. ALL FEATURES ARE ESTIMATED FROM A COMBINATION OF PARTIAL SURVEYED FEATURES, AS-BUILT RECORDS, AND AERIAL IMAGINARY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL EXISTING AND PROPOSED FEATURES SHOWN ON PLAN.
  3. REFER TO SPECIFICATION FOR SITE PROTECTION MEASURES AND ACCESS BEFORE ANY GROUND DISTURBANCE BEGINS.
  4. REFER TO DRAWING C-301 FOR PLANTING NOTES AND DETAILS.

LEGEND

	OHWM (BASED ON LIDAR)
	EXISTING PROPERTY LINE
	EXISTING DRAINAGE OUTFALL
	SEDIMENT REMOVAL AREA
	EXISTING STRUCTURE
	APPROX. PATHWAY

SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	PLANTING LEGEND	
				QUANTITIES	
BETULA Papyrifera	PAPER BIRCH	1.5 CAL.	AS SHOWN*	1	
ACER Circinatum	VINE MAPLE	5 GAL.	AS SHOWN*	2	
MAHONIA Nervosa	LOW OREGON-GRAPE	1 GAL.	2' O.C.	17	
VIBURNUM Edule	HIGHBRUSH CRANBERRY	1 GAL.	3' O.C.	9	

\*TREE LOCATIONS SHALL BE FIELD ADJUSTED TO MAINTAIN A MINIMUM OF 5' CLEARANCE FROM EXISTING FENCE AND OTHER UTILITIES.



**PLANTING PLAN**  
SCALE: 1"=5'-0"

NO	DATE	BY	APPR	REVISIONS

**Jacobs**



Approved By

XXX CONSTRUCTION INSPECTOR DATE X  
XXX PROJECT MANAGER DATE X

G. BERGMAN MARCH 2021 DESIGNED BY DATE  
G. BERGMAN MARCH 2021 DRAWN BY DATE  
L. FRENCH MARCH 2021 CHECKED BY DATE



**2442 WLSP SINKHOLE LAKE RESTORATION**  
CITY OF BELLEVUE WASHINGTON

CIVIL

**PLANTING PLAN**

DWG NO. **C-102** SHT **4** OF **8**

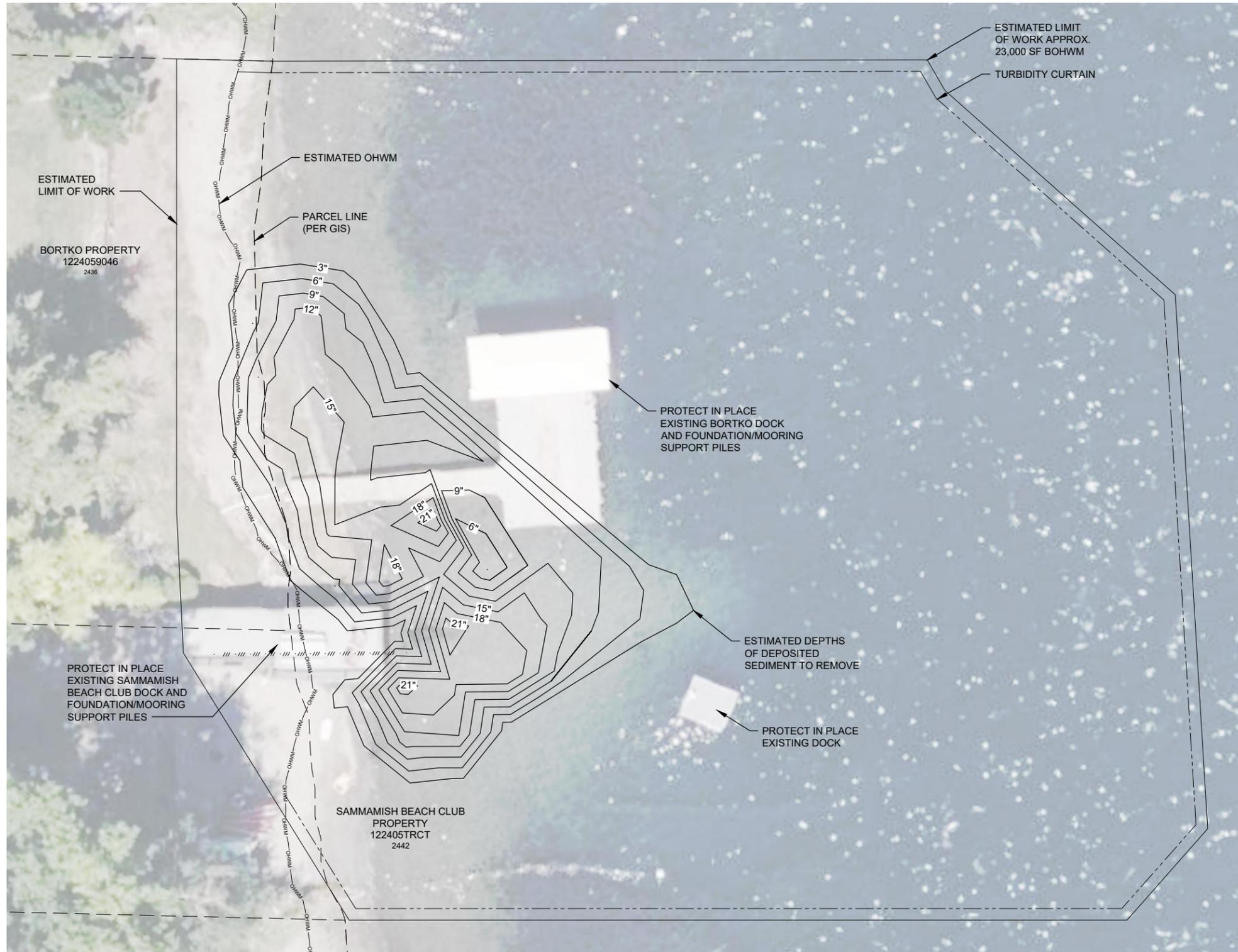
BAR IS ONE INCH ON ORIGINAL DRAWING

90% REVIEW

SEC 17 TWP 24N RGE 5E

UTILITY GRID # F-14

Location: C:\pwworking\den003\ch2rhill\_dyong\vd1107954  
 Dwg File: C-103.dwg  
 Layout: Sheet 1  
 Plot Date: 3/24/2021 8:48 AM  
 Plot By: Yang, Jan/SEA

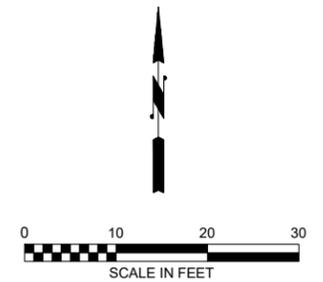


NOTES:

1. ALL ACCUMULATED DEBRIS SHALL BE COLLECTED FROM CONTAINMENT/ABSORBENT BOOM AND DISPOSED OFFSITE WITHOUT BEING STOCKPILED ON THE SITE.
2. SEE DRAWING C-302 FOR ON-SHORE CESC REQUIREMENTS.
3. EROSION OR SEDIMENT CONTROL BARRIERS SHALL BE PLACED ALONG THE EDGE OF BARGES HOLDING DEMOLITION DEBRIS AND PILE SECTIONS, TO CONTAIN AND FILTER MATERIAL IN ORDER TO PROTECT WATER QUALITY.
4. DEMOLITION DEBRIS, DREDGED AND EXCAVATED MATERIALS SHALL NOT BE STOCKPILED ON THE SITE. IMMEDIATELY REMOVE ALL MATERIALS FROM THE SITE.
5. ANY DEPLOYED CONTAINMENT, BOOM OR FILTER STRUCTURE SHALL BE INSPECTED DAILY AND REPAIRED AS NECESSARY TO ENSURE ITS FUNCTION. DEBRIS AND SUBSTANCES COLLECTED IN THE CONTAINMENT, BOOM OR FILTER STRUCTURE SHALL BE REMOVED FROM THE STRUCTURE AT LEAST DAILY, WHENEVER ACCUMULATION PLACES THE STRUCTURE AT RISK, AND BEFORE RELOCATION OR THE REMOVAL OF THE STRUCTURE.
6. REFER TO ADDITIONAL GENERAL AND SEDIMENT REMOVAL NOTES ON DRAWING G-002.
7. THE SITE IS NOT SURVEYED. ALL FEATURES ARE ESTIMATED FROM A COMBINATION OF PARTIALLY SURVEYED FEATURES, AS-BUILT RECORDS, AND AERIAL IMAGERY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL EXISTING AND PROPOSED FEATURES SHOWN ON PLAN.

LEGEND

- OHWM — OHWM — OHWM (BASED ON LIDAR)
- - - - - EXISTING PROPERTY LINE
- o — EXISTING DRAINAGE OUTFALL
- - - - - EXISTING EASEMENT
- · · · · UTILITY REMOVAL



**SEDIMENT REMOVAL PLAN**

SCALE: 1"=10'

NO	DATE	BY	APPR	REVISIONS

**Jacobs**



Approved By

XXX \_\_\_\_\_ X  
 CONSTRUCTION INSPECTOR DATE

XXX \_\_\_\_\_ X  
 PROJECT MANAGER DATE

P. BOMBER MARCH 2021  
 DESIGNED BY DATE

J. YANG MARCH 2021  
 DRAWN BY DATE

J. WILLIAMS MARCH 2021  
 CHECKED BY DATE



**2442 WLSP SINKHOLE  
 LAKE RESTORATION**  
 CITY OF BELLEVUE  
 WASHINGTON

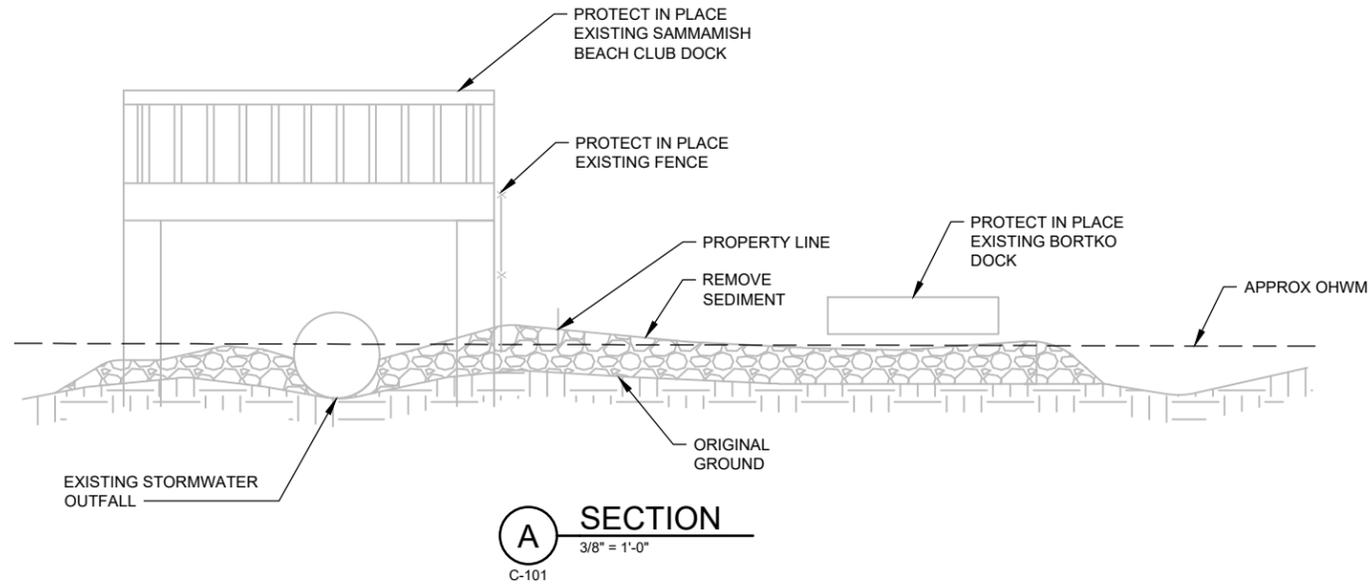
CIVIL  
**SEDIMENT REMOVAL  
 PLAN**

DWG NO. C-103 SHT 5 OF 8

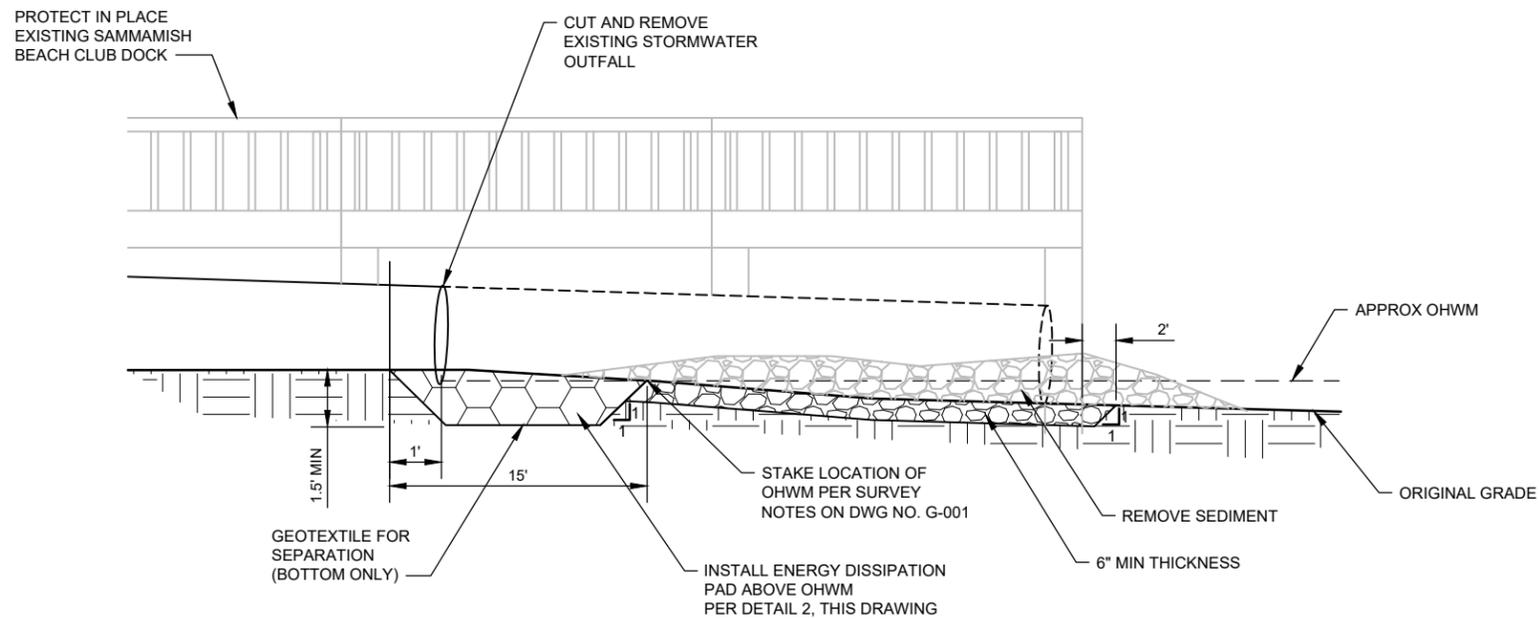
BAR IS ONE INCH ON ORIGINAL DRAWING  
 SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14

90% REVIEW

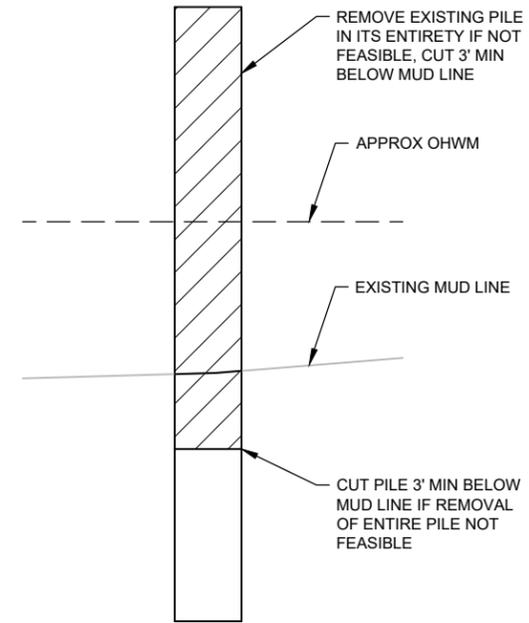
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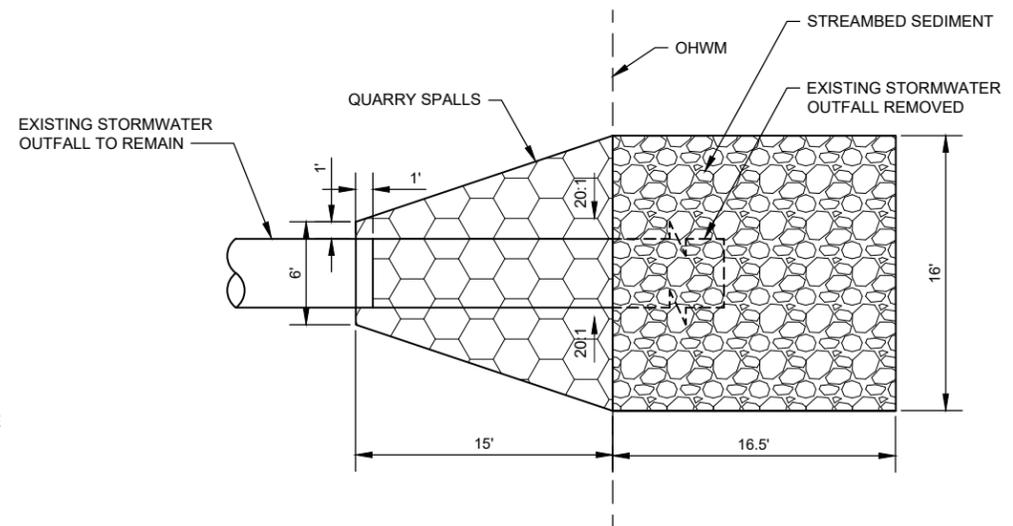
**A SECTION**  
 3/8" = 1'-0"  
 C-101



**B SECTION**  
 3/8" = 1'-0"  
 C-101



**1 TYPICAL PILE REMOVAL DETAIL**  
 3/8" = 1'-0"  
 C-101



**2 OUTFALL ENERGY DISSIPATION PAD DETAIL**  
 3/8" = 1'-0"  
 C-101

NO	DATE	BY	APPR	REVISIONS

**Jacobs**



Approved By

XXX CONSTRUCTION INSPECTOR DATE X  
 XXX PROJECT MANAGER DATE X

P. BOMBER MARCH 2021 DESIGNED BY DATE  
 J. YANG MARCH 2021 DRAWN BY DATE  
 J. WILLIAMS MARCH 2021 CHECKED BY DATE



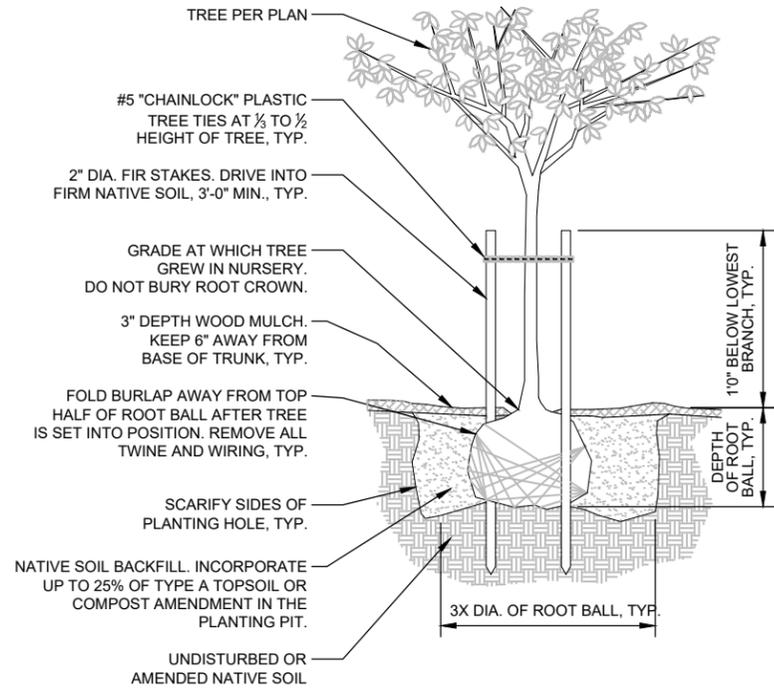
**2442 WLSP SINKHOLE LAKE RESTORATION**  
 CITY OF BELLEVUE WASHINGTON

CIVIL  
**OUTFALL SECTIONS AND DETAILS**

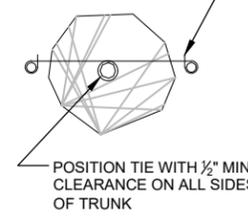
DWG NO. C-201 SHT 6 OF 8

BAR IS ONE INCH ON ORIGINAL DRAWING  
 SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14

90% REVIEW



PROVIDE 2 SPARE LINKS MIN. TO ALLOW FOR TENSION ADJUSTMENT

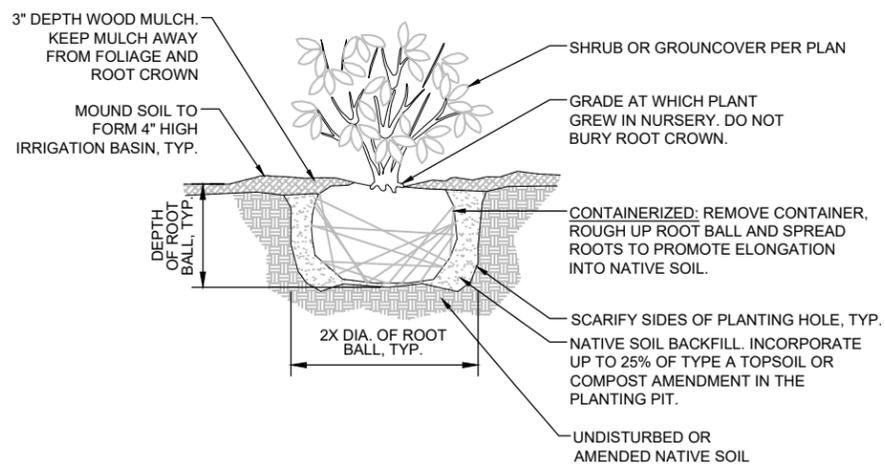


- NOTES:**
1. CONTAINERIZED TREES: REMOVE CONTAINER, ROUGH UP ROOT BALL AND SPREAD ROOTS TO PROMOTE ELONGATION INTO NATIVE SOIL.
  2. STAKING IS REQUIRED FOR TREES 5'-0" OR GREATER IN HEIGHT UNLESS OTHERWISE SPECIFIED.
  3. ALTERNATIVE STAKING METHODS MAY BE ACCEPTED WITH APPROVAL OF BELLEVUE PARKS OR REPRESENTATIVE.
  4. 3 STAKES MAY BE REQUIRED FOR TREES WITH 3" CALIPER OR GREATER.
  5. STAKES SHALL BE REMOVED NO LATER THAN 1 YEAR AFTER TREE PLANTING UNLESS OTHERWISE SPECIFIED.
  6. TREES SHALL BE INSPECTED AND APPROVED BY BELLEVUE PARKS OR REPRESENTATIVE PRIOR TO INSTALLATION.

**PLANTING NOTES:**

1. SITE IS NOT SURVEYED. CONTRACTOR SHALL VERIFY ALL EXISTING FEATURES AND UTILITIES LOCATIONS. PROTECT IN PLACE BEFORE ANY GROUND DISTURBANCE.
2. IDENTIFY WORK LIMIT FROM SHEET C-102. PROTECT EXISTING SWORD FERNS AND TREE STUMPS TO REMAIN. GRUB OUT OTHER SHRUBS, GRASSES, AND GARDEN WEEDS FROM THEIR ROOTS AND DISPOSE OFF-SITE.
3. ROTOTILL 4" OF TOPSOIL TYPE A OR APPROVED ORGANIC AMENDMENT INTO THE EXISTING SUBGRADE TO A MINIMUM TRANSITION DEPTH OF SIX (6) INCHES OVER THE ENTIRE PLANTING AREA. AMEND AREA WITH EXISTING SWORD FERNS BY PLACING 2" TOPSOIL LOOSELY OVER TOP OF THE VEGETATION.
4. LAYOUT PLANTS PER SHEET C-102 AND FIELD ADJUST TO EXISTING SITE FEATURES. PLANT LAYOUT MUST BE APPROVED BY CITY OR CITY REPRESENTATIVE BEFORE INSTALLATION.
5. INSTALL PLANT MATERIAL ACCORDING TO SPECIFICATION SECTION 8-02 AND PLANTING DETAILS SHOWN ON SHEET C-301.
6. APPLY WOOD MULCH OVER THE ENTIRE SHORELINE RESTORATION AREA, INCLUDING EXISTING SWORD FERNS AND AROUND THE TREE STUMPS.
7. WATER THE NEW PLANTINGS THOROUGHLY ON THE SAME DAY OF INSTALLATION. AT THE DIRECTION OF THE CITY OR ITS REPRESENTATIVE, TREE GATOR BAGS OR TEMPORARY IRRIGATION SYSTEM MIGHT BE REQUIRED DURING THE PLANT ESTABLISHMENT PERIOD.
8. REMOVE ALL IMPORTED DEBRIS AND RESTORE WORK AREA ACCORDINGLY TO THE SPECIFICATION.

**1** TYPICAL TREE PLANTING DETAIL  
NOT TO SCALE



**2** TYPICAL SHRUB OR GROUND COVER PLANTING DETAIL  
NOT TO SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING  
SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14

Location: C:\p\_w\workdir\den003\ch2rhill\_dyong\vd107954  
Dwg File: C-301.dwg  
Plot By: Yang, Jan/SEA  
Plot Date: 3/24/2021 8:46 AM  
Layout: Layout1

NO	DATE	BY	APPR	REVISIONS



**Approved By**

XXX \_\_\_\_\_ X  
CONSTRUCTION INSPECTOR DATE

XXX \_\_\_\_\_ X  
PROJECT MANAGER DATE

G. BERGMAN MARCH 2021  
DESIGNED BY DATE

G. BERGMAN MARCH 2021  
DRAWN BY DATE

L. FRENCH MARCH 2021  
CHECKED BY DATE

**CITY OF BELLEVUE WASHINGTON**

**2442 WLSP SINKHOLE LAKE RESTORATION**

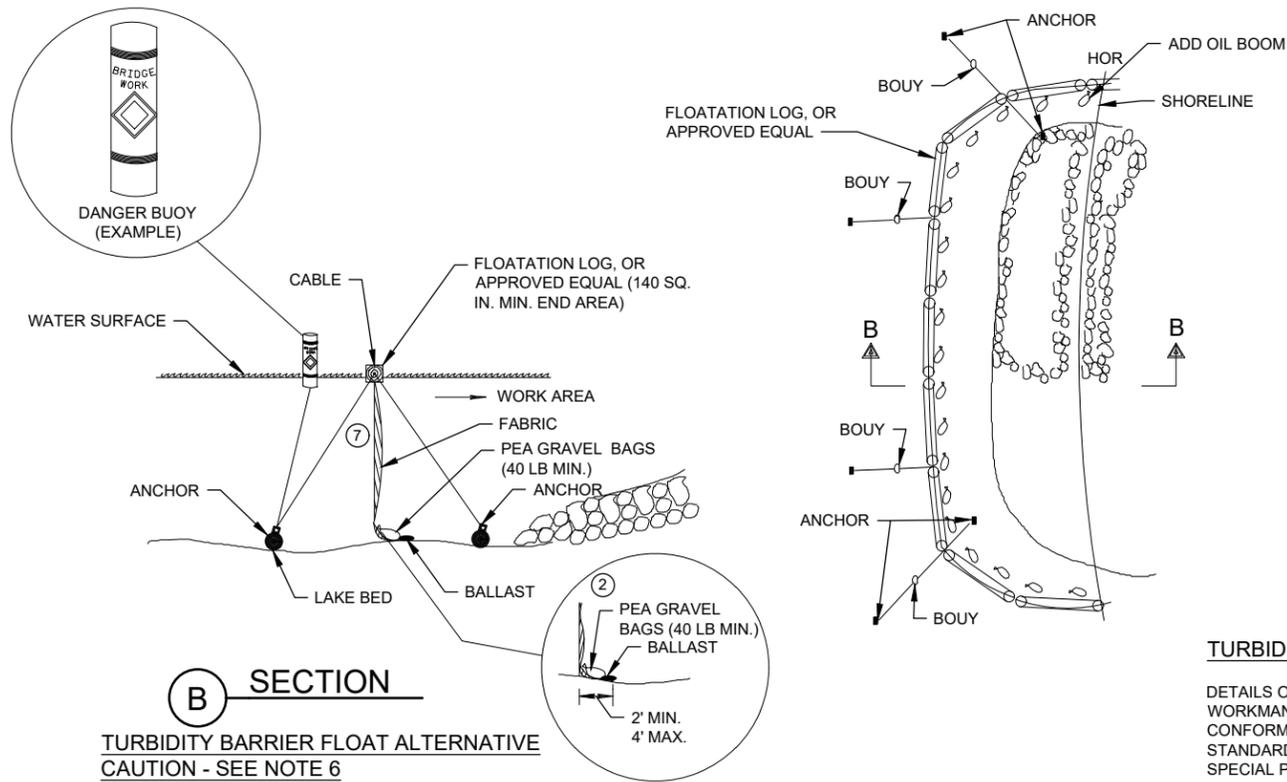
CITY OF BELLEVUE WASHINGTON

**CIVIL**

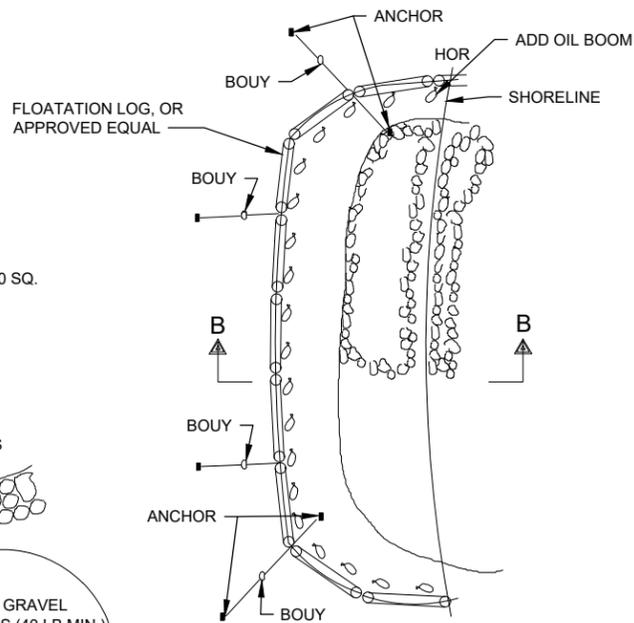
**PLANTING DETAILS**

DWG NO. C-301 SHT 7 OF 8

**90% REVIEW**



**B SECTION**  
**TURBIDITY BARRIER FLOAT ALTERNATIVE**  
**CAUTION - SEE NOTE 6**

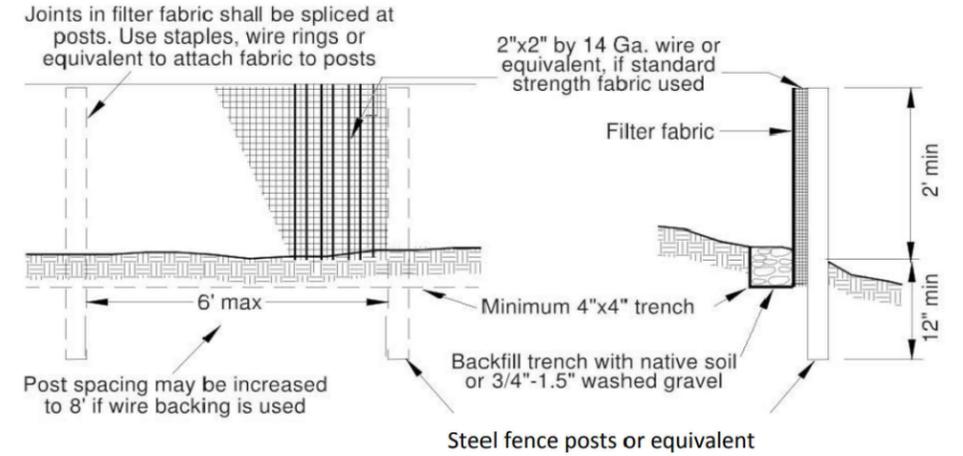


**TURBIDITY BARRIER GENERAL NOTES:**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

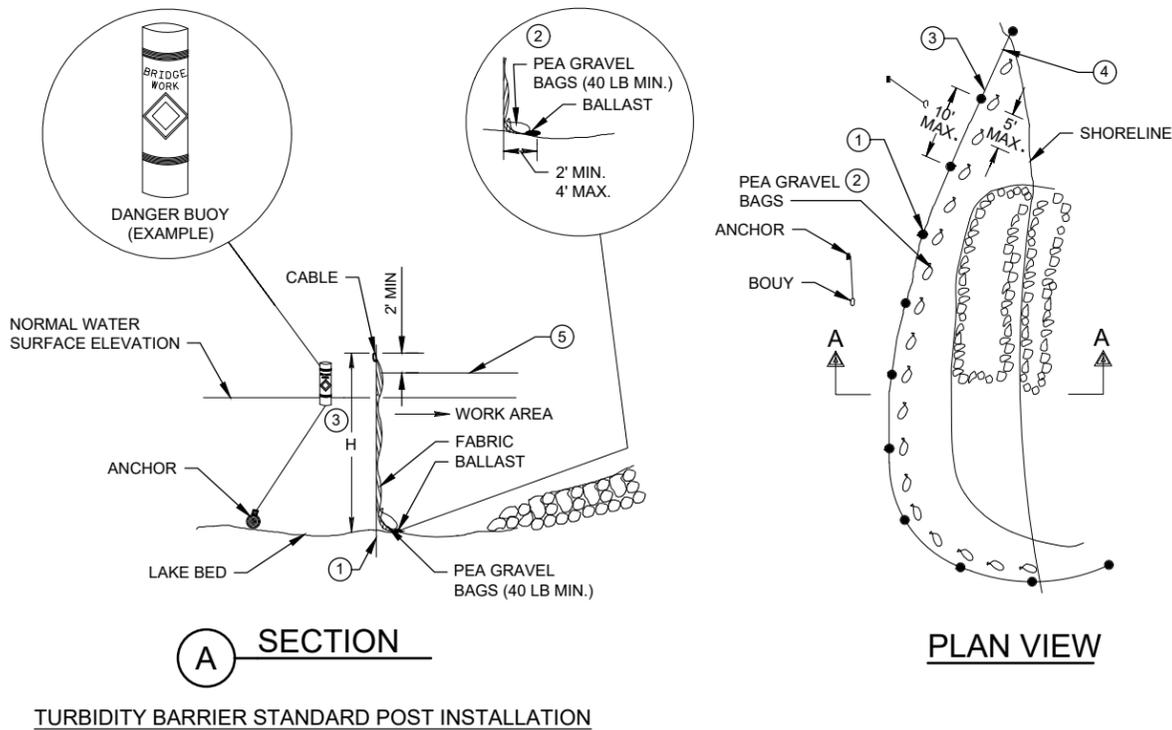
- 1 DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- 2 SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS, SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- 3 WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- 4 IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- 5 ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION.
- 6 FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- 7 ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.



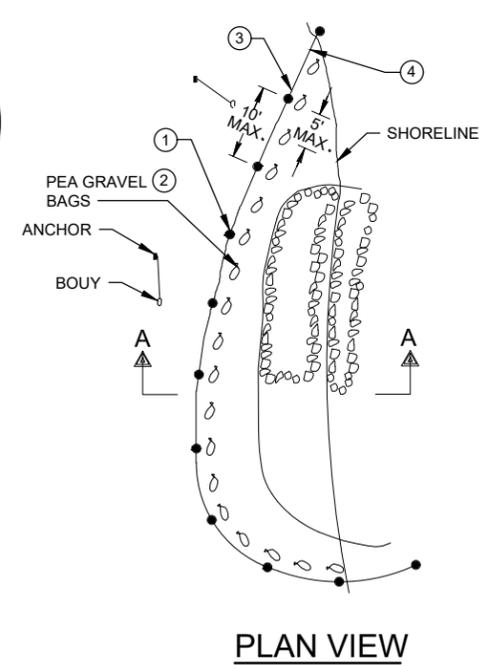
**SILT FENCE STANDARD DETAILS**

**STANDARD NOTES FOR EROSION CONTROL PLANS**

1. ALL CLEARING & GRADING CONSTRUCTION MUST BE IN ACCORDANCE WITH CITY OF BELLEVUE (COB) CLEARING & GRADING CODE, CLEARING & GRADING DEVELOPMENT STANDARDS, LAND USE CODE, UNIFORM BUILDING CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THESE REQUIREMENTS. ANY VARIANCE FROM ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF BELLEVUE DEVELOPMENT SERVICES (DSD) PRIOR TO CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE COB.
2. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
3. A COPY OF THE APPROVED PLANS AND DRAWINGS MUST BE ON-SITE DURING CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.
4. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
7. ALL LOCATIONS OF EXISTING UTILITIES HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND TO DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
8. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
9. CLEARING SHALL BE LIMITED TO THE AREAS WITHIN THE APPROVED DISTURBANCE LIMITS. EXPOSED SOILS MUST BE COVERED AT THE END OF EACH WORKING DAY WHEN WORKING FROM OCTOBER 1ST THROUGH APRIL 30TH. FROM MAY 1ST THROUGH SEPTEMBER 30TH, EXPOSED SOILS MUST BE COVERED AT THE END OF EACH CONSTRUCTION WEEK AND AT THE THREAT OF RAIN.
10. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
11. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT.
12. THE CONTRACTOR MUST MAINTAIN A SWEEPER ON SITE DURING EARTHWORK AND IMMEDIATELY REMOVE SOIL THAT HAS BEEN TRACKED ONTO PAVED AREAS AS RESULT OF CONSTRUCTION.
13. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
14. ANY EXCAVATED MATERIAL REMOVED FROM THE CONSTRUCTION SITE AND DEPOSITED ON PROPERTY WITHIN THE CITY LIMITS MUST BE DONE IN COMPLIANCE WITH A VALID CLEARING & GRADING PERMIT. LOCATIONS FOR THE MOBILIZATION AREA AND STOCKPILED MATERIAL MUST BE APPROVED BY THE CLEARING AND GRADING INSPECTOR AT LEAST 24 HOURS IN ADVANCE OF ANY STOCKPILED.
15. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
16. FINAL SITE GRADING MUST DIRECT DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AT A MINIMUM 5% SLOPE, PER THE INTERNATIONAL RESIDENTIAL CODE (IRC) R401.3.
17. INSTALL AND MAINTAIN CONSTRUCTION STABILIZATION AND EROSION CONTROL PER CITY STANDARD NOTES AND DETAILS.



**A SECTION**  
**TURBIDITY BARRIER STANDARD POST INSTALLATION**



**PLAN VIEW**

**1** **TURBIDITY BARRIER PLACEMENT DETAILS**  
 NTS  
 C-101

NO	DATE	BY	APPR	REVISIONS

**Jacobs**



Approved By

XXX CONSTRUCTION INSPECTOR DATE X  
 XXX PROJECT MANAGER DATE X

P. BOMBER MARCH 2021 DESIGNED BY DATE  
 J. YANG MARCH 2021 DRAWN BY DATE  
 J. WILLIAMS MARCH 2021 CHECKED BY DATE



**2442 WLSR SINKHOLE LAKE RESTORATION**  
 CITY OF BELLEVUE WASHINGTON

CIVIL

**CESC DETAILS**

DWG NO. C-302 SHT 8 OF 8

90% REVIEW

SEC 17 TWP 24N RGE 5E UTILITY GRID # F-14

BAR IS ONE INCH ON ORIGINAL DRAWING

Location: C:\pwworking\den003\ch2\mill\_diyong\vd1107954  
 Dwg File: C-302.dwg  
 Plot Date: 3/24/2021 8:46 AM  
 Plot By: Yang, Jan/SEA

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**To:** Abe Santos, Project Manager, City of Bellevue Utilities Department

**From:** Tess Amen, Biologist; Michelle Brownell, Biologist; and Rose Lew Tsai-Le Whitson, Biologist

**Date:** April 5, 2021

**Copies to:** Josh Kennedy, PE, Jacobs Project Manager; Brian Shuck, PE, Jacobs Project Manager; Jesse Williams, PE, Jacobs Senior Engineer; and Karen Dawson, PE, Jacobs Geotechnical Engineer

**Subject:** **Shoreline and Critical Areas Permit Documentation**  
**2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project**

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### INTRODUCTION AND PURPOSE

The City of Bellevue (City) contracted Jacobs Engineering Group Inc. (Jacobs) to prepare this technical memorandum for the 2442 West Lake Sammamish Parkway Sinkhole Lake Restoration Project (Project) to support City permit acquisition.

The purpose of this memorandum is to provide documentation to support the critical areas land use permit application for restoration of the beach slope into Lake Sammamish and associated mitigation, including shortening the stormwater outfall pipe, installing an energy dissipation pad, removing human-made debris from below and above the ordinary high water mark (OHWM) of Lake Sammamish, removing three mooring piles, and planting native vegetation along the shoreline.

### PROJECT LOCATION

The Project is located at 2442 West Lake Sammamish Parkway SE, Bellevue, Washington (within Section 13, Township 24N, Range 5E). The Project site is on the west shore of Lake Sammamish, approximately 3.6 miles southeast of downtown Bellevue.

The Project site is composed of two parcels: 122405TRCT (shared between Bellevue Utilities and the Sammamish Beach Club) and 1224059046 (owned by Dennis and Trina Bortko), as well as an unowned water tract in Lake Sammamish (confirmed—not Washington State Department of Natural Resources-owned or leased). See **Attachment 1**, 90 Percent Design Set for a vicinity map and associated construction drawings.

### PROJECT BACKGROUND

On November 25, 2019, the City identified an emergency need for repairing/replacing a failed 24-inch-diameter storm drain located at 2442 West Lake Sammamish Parkway SE, Bellevue. In response to the emergency repair order, the City installed temporary bypass pumping to pump

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stormwater around the damaged pipe section. Heavy precipitation occurring between December 19 and 20, 2019, resulted in significant stormwater flows that overwhelmed the temporary pumps. This resulted in significant downstream flooding, with water flowing through the pedestrian tunnel under West Lake Sammamish Parkway SE and consequently eroding the downstream hill slope and damaging the community pedestrian beach access and a neighboring property.

Most of the restoration work was completed by late March 2020. In early April, after Lake Sammamish started to recede to summer levels, both property owners reported that there was still a large amount of sediment in the nearshore area of the lake impeding shoreline recreation access; the owners requested the material be removed. Field investigations by Jacobs revealed that approximately 150 cubic yards of deposited material needs to be removed (**Figure 1**).

**Figure 1: The existing outfall discharging into Lake Sammamish beneath the Sammamish Beach Club dock (center) and deposited sediment piled against Bortko dock (right)**



## PROJECT DESCRIPTION

This Project will include mitigation improvements for the emergency repair work, including excavating up to 150 cubic yards of mixed fines, rounded gravels, and cobbles to smooth the beach slope so that it matches conditions prior to the sediment deposition from the failed storm drain (**Figure 2**).

**Figure 2: Sediment deposition in Lake Sammamish as a result of the failed pipe**



Based on coordination with the Washington Department of Fish and Wildlife (WDFW), the City also proposes to mitigate for impacts by shortening the stormwater outfall to be above the OHWM of Lake Sammamish and installing an energy dissipation pad extending below the OHWM to reduce scour risk; removing human-made debris (including three mooring piles) and planting native vegetation along the shoreline in the southeast corner of the Bortko property.

Construction is scheduled to begin in September 2021 and end in November 2021. In-water work will occur in October 2021.

### **EXISTING CONDITIONS**

The City regulates streams, wetlands, geologic hazards, habitat associated with species of local importance, and frequently flooded areas as critical areas under City Land Use Code (LUC) 20.25H. Critical areas that are within 200 feet of a shoreline of the state are also regulated under LUC 20.25E. Lake Sammamish is a shoreline of the state.

Critical areas and shorelines are described below based on a review of publicly available resources and data gathered during the emergency repair site visits in 2020. Because the removal of significant trees is prohibited in critical areas except as permitted, a discussion of significant trees is also included.

**Streams**

Streams are regulated as critical areas per LUC 20.25H.065. No streams are mapped in the Project area, and no streams were observed on or adjacent to the two Project parcels. Phantom Creek (Type F stream) is the closest waterbody to the Project site, aside from Lake Sammamish, located approximately 0.5 mile to the north (WDFW, n.d.-b; Northwest Indian Fisheries Commission, n.d.).

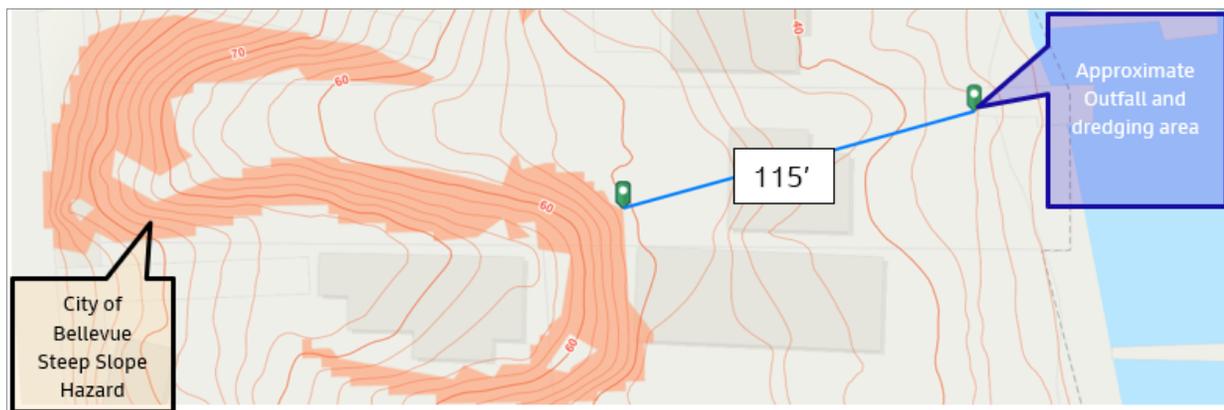
**Wetlands**

Wetlands are regulated as critical areas per LUC 20.25H.095. No wetlands are mapped in the Project area, and no wetlands were observed on or adjacent to the two Project parcels. According to U.S. Fish and Wildlife Service’s National Wetland Inventory (2020) and WDFW’s Priority Habitats and Species list (n.d.-a), the closest mapped wetland is located approximately 0.7 mile northwest of the Project site, associated with Phantom Lake.

**Geologic Hazard Areas**

Geologic hazards (including landslide hazard areas, steep slopes, coal mine hazards, and seismic hazards) are regulated as critical areas per LUC 20.25H.120. According to the City Map Viewer, a steep slope area (defined as a slope of 40 percent or more that has a rise of at least 10 feet and exceeds 1,000 square feet in area) is located directly east of West Lake Sammamish Parkway SE, extending eastward (City 2020) (**Figure 3**). This steep area is approximately 115 feet away from the Project area. The required 50-foot top of slope buffer and 75-foot toe of slope setback for steep slopes will not affect the proposed work in compliance with LUC 20.25H.120(B) and LUC 20.25H.120(C). Dredging to remove erosion-deposited sediment will require shallow excavations and will return the slope to its pre-December 2019 condition. Slope stability will not be affected.

**Figure 3: Slopes in the work zone vicinity**



Source: City of Bellevue 2020.

The City’s Map Viewer (2020) and the Washington State Department of Natural Resources’ Washington Geologic Information Portal (n.d.) indicate liquefaction hazards (moderate to high)

mapped on both Project parcels (122405TRCT and 1224059046). Some seismic liquefaction factors include saturated conditions and relatively loose to medium dense conditions.

Jacobs' geotechnical staff noted that the slopes between the roadway and the shoreline area typically have groundwater in relatively narrow bands, with material likely to be medium dense or denser, and therefore unlikely to liquefy during an earthquake. Contrastingly, the composition of beach soils and saturated conditions make this a more liquefaction-prone area. Despite this distinction, under LUC 20.25H.120, the Washington State Department of Natural Resources' mapping classifies the extent of the Project area as a seismic hazard area. Seismic hazards do not require a buffer or structure setback per LUC 20.25H.035, but they are subject to the performance standards of LUC 20.25H.125.

### ***Habitat Associated with Species of Local Importance***

Coho (*Oncorhynchus kisutch*), winter steelhead (*O. mykiss*), fall Chinook (*O. tshawytscha*), resident coastal cutthroat (*O. clarki clarki*), kokanee (*O. nerka*), bull trout (*Salvelinus confluentus*), and sockeye (*O. nerka*) are documented in Lake Sammamish (Northwest Indian Fisheries Commission, n.d.; WDFW, n.d.-a, n.d.-b). Of these species, Chinook salmon, bull trout, and coho salmon are designated as species of local importance (LUC 20.25H.150.A). No other habitats of species of local importance were mapped in the Project vicinity or observed during our site visit.

Since the Project location is within other designated critical areas and associated buffers, per LUC 20.25H.150.B, the Project location does not include designated habitat. However, Lake Sammamish and its inhabitants are still protected to equivalent or better conditions under other federal, state, and local regulatory processes.

### ***Frequently Flooded Areas***

The City has adopted the Federal Emergency Management Agency's Flood Insurance Rate Maps, dated August 19, 2020. Work is proposed in water and landward of Lake Sammamish's OHWM and within the mapped 100-year floodplain (Flood Insurance Rate Map Panel 53033C0680G). Development or activity in frequently flooded areas is regulated by LUC 20.25H.180. A rise in the base flood elevation is prohibited.

### ***Shorelines***

Shorelines are regulated under LUC 20.25E, which applies to shorelines of the state, including lands extending landward for 200 feet in all directions from the OHWM and all floodways, floodplains, and associated wetlands. Lake Sammamish is a shoreline of the state. In Bellevue, the established OHWM elevation of Lake Washington is 31.8 feet (North American Vertical Datum of 1988 [NAVD 88]). All land within 200 feet of this elevation is regulated under LUC 230.25E. No delineation or survey of Lake Washington's OHWM was undertaken, under the direction of City Utilities.

The outfall is part of the local city utility system and is an existing, nonconforming structure under LUC 20.25E.020. The Project will modify the stormwater outfall structure by shortening

the pipe so that it does not extend waterward of the OHWM. The Project area is considered Shoreline Residential Environment landward of the OHWM and Recreational Boating waterward of the OHWM.

### ***Trees***

Removal of significant trees is prohibited in critical areas per LUC 20.25H.055.C, except as allowed through a land use permit approval process. A significant tree is a healthy evergreen or deciduous tree measuring 8 inches in diameter or greater at 4 feet above existing grade. No significant trees are present in the Project work zone or will be removed as a part of the Project.

## **IMPACTS**

### ***Impact Avoidance and Minimization***

The Project has been designed to avoid and minimize impacts to critical areas in accordance with the preferred sequence of mitigation (LUC 20.25H.215 and LUC 20.25E.060).

The Project will avoid impacts by doing the following:

- The in-water work will be performed in October to avoid federally protected migrating salmonids within Lake Sammamish.
- The Project footprint will be limited to the smallest area possible.

The Project will minimize unavoidable impacts by doing the following:

- The impacts to the steep slope west of the work zone will be balanced with impacts to in-water areas by using a combination of access via existing driveways and barges.
- The use of a weighted silt curtain below the OHWM will be specified to reduce turbidity discharges (or better).
- A Temporary Erosion and Sediment Control Plan will be prepared prior to construction with best management practices to reduce/control erosion.
- Fish removal will occur in the isolated work area by qualified biologists with appropriate training using fish exclusion protocols from the Washington State Department of Transportation (2016) and the U.S. Fish and Wildlife Service (Brennan-Dubbs 2012). The most conservative approach will be used when there are conflicting measures. Electrofishing will be used only after less invasive fish removal methods have been implemented.
- The slope into Lake Sammamish will be smoothed following excavation of deposited sediments to remove any holes that could cause fish entrapment.
- The removed sediment will be placed in Super Sacks, drained, tested for contamination, and transported by barge and then by dump truck to approved disposal sites.
- No fill will be used, and no new fill materials will be placed in Lake Sammamish. The exception is if the mooring piles extracted are contaminated with creosote. If this is the case, the pile extraction may be followed by capping with clean sediment.

- The construction contractor will monitor for turbidity discharges at the point of compliance, as specified in § 201A-210(1)(e)(i) of Title 173 of the Washington Administrative Code (WAC 173-201A-210[1][e][i]).
- Excess or waste materials generated during construction will be collected and recycled or disposed of at an approved upland facility. Demolition and construction materials will be stored in upland areas where runoff cannot cause materials to enter Lake Sammamish.
- All equipment that will operate over water or below the OHWM will be cleaned of accumulated grease, oil, or mud. All leaks will be repaired prior to arriving on-site. Equipment will be inspected daily for such issues as leaks or accumulations of grease, and any identified problems will be fixed before operating over water or below the OHWM.
- The contractor will have a spill kit with oil-absorbent materials on-site to be used in the event of a spill or if any petroleum product is observed in the water. The contractor will prepare a Spill Prevention, Control, and Countermeasure Plan to be used for the Project duration.

### ***Project Impacts***

The primary Project impact is the removal of erosion-deposited sediment and associated construction impacts. The Project also includes mitigation impacts for beneficial restoration that affect designated critical areas and shorelines. These impacts are described below based on the 90 Percent Design (**Attachment 1**).

#### **Permanent Excavation Impacts**

The Project will remove up to 150 cubic yards of mixed fines, rounded gravels, and cobbles to smooth the beach slope so that it matches conditions prior to the sediment deposition.

#### **Temporary Construction Impacts**

The contractor will access the site via a shallow draft barge, which will have 14-inch spuds for anchoring. The spuds will temporarily impact 308 square feet of Lake Sammamish substrate. Additionally, beach slope restoration activities will temporarily impact 3,785 square feet (50 feet of which are above the OHWM).

#### **Impacts associated with Mitigation**

The section of the existing outfall extended below the OHWM will be removed, with an energy dissipation installed. The energy dissipation pad will be constructed at the new outfall location, which is within a mapped seismic hazard area and frequently flooded area (100-year floodplain of Lake Sammamish). The pad will also be within the 200-foot shoreline jurisdiction.

Above the OHWM, the energy dissipation pad will measure approximately 10 by 15 feet. Up to 6 cubic yards of clean quarry angular material will be obtained from approved quarries and transported by barge to the work site. This material will be placed by excavator or by hand in the 100-year floodplain above the OHWM of Lake Sammamish to form the landward portion of the energy dissipation pad for the shortened stormwater outfall.

During refinement of the 90 percent design, Jacobs modeled scour risk and determined that the energy dissipation pad will need to extend below OHWM to avoid scouring of the sandy material in the beach transition to the gravel/cobble lakebed observed at lower lake depths. The portion extending below the OHWM will be approximately 17 by 16 feet and constructed with up to 5 cubic yards of WSDOT Streambed Sediment Mix (D50 of 1 inch), similar in composition to the existing lakebed to minimize adverse habitat impacts while reducing scour risk. No angular rock will be installed waterward of the OHWM (including no subsurface installation).

### ***Critical Areas and Shoreline Impacts***

The Project impacts will not adversely affect geologic hazard areas or frequently flooded areas. Impacts to designated Shoreline will be mitigated.

### **Impacts to Geologic Hazard Areas**

As assessed by Jacobs geotechnical staff, the presence of the stormwater pipeline and outfall tend to provide groundwater drainage that would lessen the risk of seismic liquefaction. Removal of the erosion-deposited sand and gravel will also return the area to the pre-2019 condition with no change to the liquefaction risk.

### **Impacts to Frequently Flooded Areas**

The Project will not result in a rise in the base flood elevation because it does not include fill placement that could result in a rise in the base flood elevation. The proposed modification to the stormwater outfall will be at grade, minor and have equivalent or less impacts compared with existing conditions. The dredging activities waterward of the OHWM will also remove up to 150 cubic yards of deposited sediment, restoring the approximate bathymetry of the shoreline as compared with conditions prior to storm-deposited sediments.

### **Impacts to Shorelines**

Both the excavation of the deposited sediments and the mitigation action including the installation of the energy dissipation pad will permanently impact areas within shoreline jurisdiction. The combined impacts for project construction and mitigation actions are a part of a net beneficial improvement to the existing shoreline condition as described in the next section.

## **MITIGATION**

Mitigation for Project impacts include the following:

- Shortening the stormwater outfall pipe so that it is no longer below the OHWM of Lake Sammamish and installation of the energy dissipation pad. This is considered habitat restoration since it will remove the pipe from aquatic habitat and decrease risk of scour.
- Removing the following human-made debris that is located below the OHWM of Lake Sammamish and/or in the 100-year floodplain: miscellaneous debris such as old railroad ties below the Sammamish Beach Club dock, two old wood mooring piles, and one cut wood pile near the Bortko dock. The rail ties and piles may be treated with creosote and will be tested prior to removal to ensure proper handling. The old piles will be sawed as

close to the ground surface as possible and lifted out using equipment from the barge. The piles will be disposed of at approved facilities. These activities are habitat restoration (below the OHWM) and shoreline (above the OHWM).

- Establishing shoreline mitigation plantings within 10 feet above the OHWM of Lake Sammamish, in the southeast corner of the Bortko property (300 square feet) to enhance shoreline habitat.

### ***Mitigation Planting Plan***

The goal of the mitigation planting plan is to enhance approximately 320 square feet of Lake Sammamish's shoreline (located 10 feet above the OHWM of Lake Sammamish in the southeast corner of the Bortko property) with native trees and shrubs. Currently, the proposed planting area is composed of lawn, ornamental shrubs, and sword fern (**Figure 4**). This area is outside of the OHWM but within the 100-year floodplain. The shoreline plantings will be monitored for 5 years.

**Figure 4: Vegetation in the proposed mitigation area**



To prepare the area for mitigation plantings, the ornamental shrubs will be removed, while the sword fern will be retained. The planting mix will contain species suited to the shoreline environment and typically found in Lake Sammamish natural areas. These include species like vine maple, paper birch, low Oregon grape, and highbrush cranberry (**Table 1**).

**Table 1: Shoreline Enhancement Plant Summary**

Species	Quantity	Spacing	Condition
Paper birch ( <i>Betula papyrifera</i> )	1	As shown on planting plan	1.5-gallon container
Vine maple ( <i>Acer circinatum</i> )	2	As shown on planting plan	5-gallon container
Low Oregon grape ( <i>Mahonia nervosa</i> )	9	2 feet on center	1-gallon container
Highbrush cranberry ( <i>Viburnum edule</i> )	9	3 feet on center	1-gallon container
<b>Total</b>	<b>21</b>	—	—

***Shoreline Functions and Values Assessment***

The proposed mitigation plantings will provide nest and forage opportunities to songbirds and small mammals, providing a functional boost to available habitat. Long term, the plantings will provide shade to the Lake Sammamish shoreline and wood material to the beach and nearshore habitat. The proposed plantings will provide approximately 20 to 30 feet of canopy towards the shoreline once they reach maturity, with long afternoon shadows anticipated over the water in spring and summer months based on site aspect. The plantings will also help screen Lake Sammamish from the residential Bortko property. Lastly, the vegetation will filter and slow surface water runoff into Lake Sammamish.

***Shoreline Mitigation Performance Standards and Monitoring***

The City will monitor the mitigation site in accordance with LUC 20.25H.220. Following mitigation site installation, a site visit will be conducted to confirm the as-built conditions and establish the site baseline conditions for monitoring. Performance monitoring will then occur for 5 years, per LUC 20.25H.220(D) and as approved in the U.S. Army Corps of Engineers Clean Water Act Section 404 Nationwide Permit (NWS-2020-513; obtained October 2020), near the end of the growing season in late summer each year. Project performance standards will be used to track and measure the success of the mitigation planting area. The City will prepare and submit a monitoring report describing general site conditions, vegetation health, mitigation performance assessment, maintenance recommendations, and any necessary remedial recommendations after the annual performance monitoring visit. **Table 2** provides the monitoring schedule. **Table 3** summarizes the performance standards.

**Table 2: Mitigation Planting Performance Standards**

Year	Season	Maintenance	Monitoring	Report Due
1	Summer	General	X	
	Winter	Replanting, if needed		X
2	Summer	General	X	
	Winter	Replanting, if needed		X
3	Summer	General	X	
	Winter	—		X
4	Summer	General	X	
	Winter	—		X
5	Summer	General	X	
	Winter	—		X

**Table 3: Mitigation Planting Performance Standards**

Performance Standard	Year 1	Year 2	Year 3	Year 4	Year 5
Plant survival – trees, shrubs, and groundcover (percent)	100% <sup>1</sup>	90%	—	—	—
Native woody vegetative cover – trees and shrubs, volunteers included	—	—	15% or greater	20% or greater	25% or greater
Native plant diversity	At least four species of native shrubs will be present.				
Invasive Species	Washington state-listed or county-listed Class A noxious weeds must be eradicated. Class B or Class C noxious weeds may not exceed 20% cumulative cover.				

**Note:**

<sup>1</sup> These performance standards are based on 2017 Washington State Department of Transportation Performance Standards for Wetland Mitigation.

**Maintenance**

Maintenance will be performed regularly to address conditions that could jeopardize the success of the planting effort. During regular monitoring visits, any necessary maintenance actions will be identified and reported to the landscape maintenance contractor.

Typical maintenance activities will include the following:

- Replacing all dead plantings after Year 1 and as recommended in subsequent years.
- Irrigating during the first 1 to 2 years during summer months to establish plantings and as needed subsequently during drought years.
- Removing noxious vegetative species by hand.
- Removing any encountered human debris.

### ***Contingency Measures***

The Project performance standards create a baseline by which to measure whether the planting effort is performing as proposed and whether a contingency plan is necessary. Specific contingency measures cannot be anticipated. Common items that may require a contingency action include a particular plant species perishing due to unforeseen site conditions (e.g., too much or too little moisture) and site vandalism (e.g., plant removal).

Potential problems will be evaluated by a qualified biologist during each monitoring event. Specific contingency actions will be developed, discussed with the City's planning staff, and implemented based on scientifically and economically feasible recommendations.

The City Utilities Department will implement a contingency plan on an as-needed basis. Contingency plans will be developed for review and approval by the City's planning staff. Contingency plans will be submitted by December 31 of the year in which deficiencies are discovered. Approved and implemented contingency plans will be described in the subsequent monitoring report.

### **LIMITATIONS**

This memorandum was prepared for the exclusive use of City of Bellevue Utilities Department and its representatives. The findings and conclusions documented in this memorandum have been prepared for specific application to this Project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this report are professional opinions based on interpretation of information currently available to Jacobs and made within the operational scope, budget, and schedule constraints of the Project. No warranty, expressed or implied, is made.

### **REFERENCES**

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